



Attorney Docket No.: 3573.204-US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

EXPRESS MAIL CERTIFICATE

Box Patent Application
 Hon. Commissioner of Patents and Trademarks
 Washington, DC 20231

Re: U.S. Patent Application for
 NOSE PEN

Applicants: Rex et al.

Sir:

Express Mail Label No. RB813923308US.

Date of Deposit March 16, 1993

I hereby certify that the following attached
 paper(s) or fee

1. Transmittal of Supplemental Declaration
2. Executed Combined Declaration and Power of Attorney

are being deposited with the United States Postal Service
 "Express Mail Post Office to Addressee" under 37 C.F.R. 1.10
 on the date indicated above and is addressed to the
 Commissioner of Patents and Trademarks, Washington, DC 20231.

Patricia Duque

(Name of person mailing paper(s) or fee)

(Signature of person mailing paper(s) or fee)

Mailing Address:

Novo Nordisk of North America, Inc.
 405 Lexington Avenue, Suite 6200
 New York, NY 10017
 (212) 867-0123



**COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY
(Includes Reference to PCT International Applications)**

Attorney's Docket Number:
3573.204-US

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

NOSE PEN

the specification of which (check only one item below):

I is attached hereto

I was filed as United States application

Serial No. _____

on _____

and was amended

on _____

(if applicable).

I was filed as PCT International application

Number PCT/DK91/00400

on December 19, 1991

and was amended under PCT Article 19

on _____

(if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign applications(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign applications(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

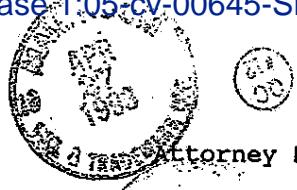
PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

COUNTRY	APPLICATION NUMBER	DATE OF FILING	PRIORITY CLAIMED
Denmark	3028/90	December 21, 1990	<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO

COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY (Includes Reference to PCT International Applications)		Attorney's Docket Number: 3573-204-US			
<p>I hereby claim the benefit under Title 35, United States Code §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this applications is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:</p>					
PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120:					
U.S. APPLICATIONS		STATUS (Check one)			
U.S. APPLICATION NUMBER	U.S. FILING DATE	Patented Pending Abandoned			
PCT APPLICATIONS DESIGNATING THE U.S.					
APPLICATION NO.	FILING DATE	US SERIAL NUMBERS ASSIGNED (if any)			
PCT/DK91/00400	December 19, 1991	X			
<p>POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>Steve T. Zelson, Esq. Reg. No. 30,335</td> <td>Elias J. Lambiris, Esq. Reg. No. 33,728</td> <td>Cheryl H. Agris Reg. No. 34,086</td> </tr> </table>			Steve T. Zelson, Esq. Reg. No. 30,335	Elias J. Lambiris, Esq. Reg. No. 33,728	Cheryl H. Agris Reg. No. 34,086
Steve T. Zelson, Esq. Reg. No. 30,335	Elias J. Lambiris, Esq. Reg. No. 33,728	Cheryl H. Agris Reg. No. 34,086			
Send Correspondence to: Steve T. Zelson, Esq. Nova Nordisk of North America, Inc. 405 Lexington Avenue, Suite 6200 New York, New York 10017		Direct Telephone Calls To: Steve T. Zelson (212) 867-0123			
1	Full Name of Inventor	Family Name	First Given Name	Second Given Name	
	REX		Jørn		
	Residence & Citizenship	City	State or Foreign Country	Country of Citizenship	
	Roskilde		Denmark	Denmark	
	Post Office Address	Post Office Address	City	State & Zip Code/Country	
		Hyldefotoften 6, Gundsoemagle	DK-4000 Roskilde	Denmark	
2	Full Name of Inventor	Family Name	First Given Name	Second Given Name	
	STEENGAARD		Kim		
	Residence & Citizenship	City	State or Foreign Country	Country of Citizenship	
	Hvidovre		Denmark	Denmark	
	Post Office Address	Post Office Address	City	State & Zip Code/Country	
		Ketilstorp Allé 53	DK-2650 Hvidovre	Denmark	
3	Full Name of Inventor	Family Name	First Given Name	Second Given Name	
	ELK		Svend		
	Residence & Citizenship	City	State or Foreign Country	Country of Citizenship	
	Birkeroed		Denmark	Denmark	
	Post Office Address	Post Office Address	City	State & Zip Code/Country	
		Lyngborghave 48	DK-3460 Birkeroed	Denmark	
<p>I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.</p>					
Signature of Inventor 1 <i>REX</i>		Signature of Inventor 2 <i>Stein Steengaard</i>		Signature of Inventor 3 <i>Svend Elk</i>	
Date 11/2 - 1993.		Date 3/3 - 1993		Date 12/2 - 1993	



SAN00941671



Attorney Docket No.: 3573.204-US

PATENT

3307 L. Spurll
5-14-93#7/
Rex
et
al
Time

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Rex et al.

Serial No.: 07/793,412 Group Art Unit: 3307

Filed: January 13, 1992 Examiner: K. Asher

For: NOSE PEN

PETITION AND FEE FOR EXTENSION OF TIME (37 C.F.R. 1.136(a))Hon. Commissioner of Patents and Trademarks
Washington, DC 20231

Sir:

It is respectfully requested that the time for response to Office Action dated December 1, 1992 be extended for a period of three months from February 1, 1993 to May 1, 1993.

Please charge the total fee, estimated to be \$840.00, to Novo Nordisk of North America, Inc., Deposit Account No. 14-1447. A duplicate of this sheet is enclosed.

Respectfully submitted,

Date: April 27, 1993

REQUEST FOR EXTENSION OF TIME IS GRANTED Novo Nordisk of North America, Inc.
AUTHORITY OF THE PRIMARY EXAMINER FOR

Steve T. Zelson
Steve T. Zelson, Reg. No. 30,335
405 Lexington Avenue, Suite 6200
New York, NY 10174-6201
(212) 867-0123

L. Spurll
Clerk, Group 330

L. O. P. E.
ATTY Notified
P 10430 05/11/93 07793412

14-1447 100 117

840.00CH



Attorney Docket No.: 3573.204-US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Rex et al.

Serial No.: 07/793,412 Group Art Unit: 3307

Filed: January 13, 1992 Examiner: K. Asher

For: NOSE PEN

EXPRESS MAIL CERTIFICATE

Hon. Commissioner of Patents and Trademarks
Washington, DC 20231

Sir:

Express Mail Label No. TB434692027US

Date of Deposit April 27, 1993

I hereby certify that the following attached
paper(s) or fee

1. Petition and Fee for Extension of Time
(in duplicate)

are being deposited with the United States Postal Service
"Express Mail Post Office to Addressee" under 37 C.F.R. 1.10
on the date indicated above and is addressed to the
Commissioner of Patents and Trademarks, Washington, DC 20231.

Daphne Ghee

(Name of person mailing paper(s) or fee)

Daphne Ghee

(Signature of person mailing paper(s) or fee)

Mailing Address:

Novo Nordisk of North America, Inc.
405 Lexington Avenue, Suite 6200
New York, NY 10017
(212) 867-0123



Attorney Docket No.: 3573.214-US

PATENT

88/054913
J. F. K. L. Spurwell
7-23-93

8/P
A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Anticipated Classification of this application:
Class 239 Subclass

Prior Application:
Examiner: K. Asher
Group Art Unit: 3307

FILE WRAPPER CONTINUING APPLICATION

Box FWC
Hon. Commissioner of Patents and Trademarks
Washington, DC 20231

Sir:

- This is a request for filing a
 Continuation

Divisional

Continuation-in-part

application under 37 CFR § 1.62, of pending application Ser. No. 07/793,412 filed on January 13, 1992 for NOSE PEN by the following named inventor(s):

JØrn Rex, a citizen of Denmark, residing at Hyldetoften 6,
Gundsoemagle, DK-4000 Roskilde, Denmark;
Kim Steengaard, a citizen of Denmark, residing at Ketilstorp
Allé 53, DK-2650 Hvidovre, Denmark; and
Svend Elk, a citizen of Denmark, residing at Lyngborghave 48,
DK-3460 Birkeroed, Denmark.

The above-identified prior application in which no payment of issue fee, abandonment of, or termination of proceedings has occurred, is hereby expressly abandoned as of the filing date of this new application. Please use all the contents of the prior application file wrapper, including the drawings, as the basic papers for the new application.

1. Please enter the Amendment(s) filed on _____ in the prior application.
2. A Preliminary Amendment is enclosed.
3. The filing fee is calculated on the basis of the claims existing in the prior application as amended at 1 and 2 above, if applicable.

CALCULATION OF APPLICATION FEE

Type	No. Filed	Less	Extra	Extra Rate	Fee
Total Claims	16	-20	0	\$22.00	\$ 0.00
Independent	1	-3	0	\$74.00	\$ 0.00
Basic Fee					\$ 710.00
Multiple Dependency Fee If Applicable (\$230.00)					\$ 230.00
Total Filing Fee					\$ 940.00

ECT TO SEP

4

4. Please charge the required fee, estimated to be \$940.00, to Novo Nordisk of North America, Inc., Deposit Account No. 14-1447. A duplicate of this sheet is enclosed.
5. A new oath or declaration is included since this application is a continuation-in-part.
6. _____ is included.
7. Priority of application serial no. 3028/90 filed on December 21, 1990 in Denmark is claimed under 35 U.S.C. 119.
 a. A certified copy thereof is submitted herewith.
 b. A certified copy thereof was filed in the prior PCT Application No. PCT/DK91/00400.
8. The benefit of application serial no. 07/793,412 filed on January 13, 1992 in the United States and of application serial no. PCT/DK91/00400 filed on December 19, 1991 via the PCT is claimed under 35 U.S.C. 120.
9. Amend the specification by inserting before the first line the sentence: This application is a
 continuation
 divisional
 continuation-in-part
 application of co-pending application Serial No. 07/793,412, filed January 13, 1992, now abandoned. XH
-
10. The prior application is assigned of record to Novo Nordisk A/S recorded on January 30, 1992, Reel 5996, Frame 0341.
11. The Power of Attorney in the prior application is to Steve T. Zelson, Esq. and Elias J. Lambiris, Esq. Address all future communications to Steve T. Zelson, Esq., NOVO NORDISK OF NORTH AMERICA, INC., 405 Lexington Avenue, Suite 6200, New York, NY 10174-6201.
12. Please abandon the prior application at a time while the prior application is pending or at a time when the petition for extension of time in that application is granted and when this application is pending and has been granted a filing date, so as to make this application co-pending with said prior application.

It is understood that secrecy under 35 U.S.C. § 122 is hereby waived to the extent that if information or access is available to any one of the applications in the file wrapper of a 37 C.F.R. § 1.62 application, be it either this application or a prior application in the same file wrapper, the PTO may provide similar information or access to all the other applications in the same file wrapper.

Date: April 27, 1993

Respectfully submitted,

Steve T. Zelson
 Steve T. Zelson, Reg. No. 30,335
 Novo Nordisk of North America, Inc.
 405 Lexington Avenue, Suite 6200
 New York, NY 10174-6201
 (212) 867-0123

DAVIS POLK & WARDWELL

1300 I STREET, N.W.
WASHINGTON, D.C. 20005

1600 EL CAMINO REAL
MENLO PARK, CA 94025

99 GRESHAM STREET
LONDON EC2V 7NG

15, AVENUE MATIGNON
75008 PARIS

450 LEXINGTON AVENUE
NEW YORK, N.Y. 10017
212 450 4000
FAX 212 450 3800

WRITER'S DIRECT
212 450 4881

MESSEUR
60308 FRANKFURT AM MAIN

MARQUÉS DE LA ENSENADA, 2
28004 MADRID

1-6-1 ROPPONGI
MINATO-KU, TOKYO 106-6033

3A CHATER ROAD
HONG KONG

November 3, 2006

Re: In re Appraisal of Transkaryotic Therapies, Inc., C.A. No. 1554-N

Arthur L. Dent, Esq.
Potter Anderson & Carroon LLP
1313 North Market Street
P.O. Box 951
Wilmington, DE 19899

Dear Art:

We write in response to your letter dated October 18, 2006. In that letter, you requested calendars or appointment books from 2004 and 2005 for the deponents in this action. Earlier this week, we provided you with calendars for Barbara Deptula and Matt Emmens. Enclosed with this letter are calendars for Wayne Yetter. In the course of collecting Mr. Yetter's calendars we have also obtained responsive emails from Mr. Yetter's personal email account. These documents are also enclosed, and together with Mr. Yetter's calendars bear production numbers TKT_APP_0502049 through TKT_APP_0503124.

We are in the process of collecting any existing calendars for the remaining deponents, and, pursuant to your request, we will endeavor to produce them at least two days before their scheduled deposition date. We are also working to confirm that we have collected and produced all responsive documents from Dennis Langer.

Finally, we also enclose documents relating to the proposed transaction with Dr. Reddy's which were previously collected, but inadvertently designated as non-responsive. These documents bear production numbers TKT_APP_0501844 through TKT_APP_0502048.

Arthur L. Dent, Esq.

2

November 3, 2006

If you have any questions, please do not hesitate to contact me.

Very truly yours,

Kevin C. Wallace /
Kevin C. Wallace

cc: Steven T. Margolin
John Reed

By Overnight and Electronic Mail



Attorney Docket No.: 3573.214-US

08/054913

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

EXPRESS MAIL CERTIFICATE

Box FWC
 Hon. Commissioner of Patents and Trademarks
 Washington, DC 20231

Re: U.S. Patent Application for
 NOSE PEN
 Continuing Application of
 Serial No. 07/793,412

Applicants: Rex et al.

Sir:

Express Mail Label No. TB434692027USDate of Deposit April 27, 1993

I hereby certify that the following attached
 paper(s) or fee

1. File Wrapper Continuing Application (in
duplicate)

is being deposited with the United States Postal Service
 "Express Mail Post Office to Addressee" under 37 C.F.R. 1.10
 on the date indicated above and is addressed to the
 Commissioner of Patents and Trademarks, Washington, DC 20231.

Daphne Ghee
 (Name of person mailing paper(s) or fee)

Daphne Ghee
 (Signature of person mailing paper(s) or fee)

Mailing Address:

Novo Nordisk of North America, Inc.
 405 Lexington Avenue, Suite 6200
 New York, NY 10017
 (212) 867-0123



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
 Address: COMMISSIONER OF PATENTS AND TRADEMARKS
 Washington, D.C. 20231

781054913

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/054,913	04/27/93	ROSKILDE	J 3573.214US
		F3M1/0727	EXAMINER ASHER, K
STEVE T. ZELSON NOVO NORDISK OF NORTH AMERICA, INC. 405 LEXINGTON AVENUE, STE. 6200 NEW YORK, NY 10174-6201			ART UNIT PAPER NUMBER 9
			3307
		DATE MAILED:	07/27/93

This is a communication from the examiner in charge of your application.
 COMMISSIONER OF PATENTS AND TRADEMARKS

This application has been examined Responsive to communication filed on _____ This action is made final.

A shortened statutory period for response to this action is set to expire 2 month(s), 0 days from the date of this letter.
 Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. Notice of References Cited by Examiner, PTO-892.
2. Notice of Draftsman's Patent Drawing Review, PTO-948.
3. Notice of Art Cited by Applicant, PTO-1449.
4. Notice of Informal Patent Application, PTO-152.
5. Information on How to Effect Drawing Changes, PTO-1474.
6. _____

Part II SUMMARY OF ACTION

1. Claims 1 - 16 are pending in the application.
2. Claims _____ are withdrawn from consideration.
3. Claims 1 - 3 are allowed.
4. Claims _____ are rejected.
5. Claims 4 - 16 are objected to.
6. Claims _____ are subject to restriction or election requirement.
7. This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. Formal drawings are required in response to this Office action.
9. The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are acceptable; not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been approved by the examiner; disapproved by the examiner (see explanation).
11. The proposed drawing correction, filed _____, has been approved; disapproved (see explanation).
12. Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has been received not been received been filed in parent application, serial no. _____, filed on _____.
13. Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. Other

EXAMINER'S ACTION

08/054,913
3307

This application is in condition for allowance except for the following formal matters:

- 5 a) the specification and claims must be amended so as to e in proper idiomatic English and to correct minor errors. Examples of such are found on page 1, line 25, "time spirit"; page 2, line 3, "0 C0"; page 8, paragraph 3, "piston 22" and "piston rod 22" (what are the proper reference numerals?); and throughout the application, "unrotatable". These are examples only, the entire application must be corrected.
- 10 b) a proper abstract is required for the Printer on a separate sheet of paper.
- 15 c) claims 4-16 are not in proper U.S. multiple dependent claim format. Appropriate amendment of these claims into proper U.S. form is required. Applicants' are respectfully reminded that additional fees will be required if the claims are put into proper U.S. multiple dependent claim format, as applicants were only charged previously for multiple dependent claim 3. The claims are improper multiple dependent claims because they depend upon other multiple dependent claims.
- 20 d) In claim 1, line 17, note "directions"; in claim 1, line 18, it is suggested that --of-- be added before "the", and that "coupled" in line 3 be replaced with --and means coupling said housing elements-- to improve claim clarity; in claim 16, line 1, note "claims 14".

Serial No. 08/054,913
Art Unit 330?

Prosecution on the merits is closed in accordance with the practice under ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.

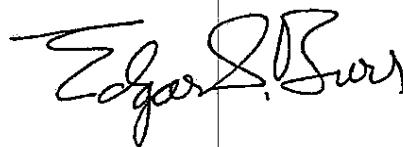
5 A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS ACTION IS
SET TO EXPIRE TWO MONTHS FROM THE DATE OF THIS LETTER.

10 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Turner et al teach a dose metering dispenser comprising a threaded plunger and spring arrangement. Holm et al teach a great deal of applicants' claimed invention, but lack the valve, spring, and a spray nozzle. Jessup teaches a syringe sprayer. The remaining references all teach dispensers in the form of pens which deliver metered doses by injection, not by spraying.

20 An inquiry concerning this communication should be directed to K. L. Asher at telephone number (703) 308-0858.

25 
K. L. Asher
July 23, 1993



EDGAR S. BURR
S.P.E.
GROUP ART UNIT 337



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

LSP 337
L. Spirell
2-1-94
#10/Reg.
Ext.
Time

In re Application of: ROSKILDE et al : Att. Doc. No.: 3573.214-US

Serial No.: 08/054,913 : Attn: Art Unit 3307

Filed: April 27, 1993 : Examiner: K. Asher

For: NOSE PEN : Date: December 23, 1993

PETITION AND FEE FOR EXTENSION OF TIME PURSUANT TO 37 CFR
Sec.1.136(a)

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

It is respectfully requested that the time for filing a response to the outstanding Office Action of July 27, 1993, be extended for a period of three (3) months from September 27, 1993 to and including December 27, 1993.

Please charge the required fee, estimated to be \$840.00, to Novo Nordisk of North America Inc. Deposit Account No. 14-1447. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

Steve T. Zelson (Reg. No. 30,335)
Novo Nordisk of North America, Inc.
405 Lexington Avenue, Suite 6200
New York, New York 10017
(212) 867-0123

4514184 61/31/94 08054913

14-1447 140 117 840.00CH

REQUEST FOR EXTENSION OF TIME IS GRANTED BY
AUTHORITY OF THE PRIMARY EXAMINER FOR

L. Spirell
Clerk, Group 330

ATTY Notified

B.O.P.



PATENT

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: ROSKILDE et al : Att.Doc.No.:3573.214-US

Serial No.:08/054,913 : Attn: Art Unit 3307

Filed:April 27, 1993 : Examiner: K. Asher

For: NOSE PEN : Date: December 23, 1993

CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)

Hon. Commissioner of Patents and Trademarks
Washington, DC 20231

Sir:

I hereby certify that the attached correspondence
comprising:

- I. Petition and Fee for Extension of Time
(in duplicate)
- II. Amendment Fee Transmittal (in duplicate)
- III. Abstract and
- IV. Amendment

is being deposited with the United States Postal Service as first
class mail in an envelope addressed to:

Commissioner of Patents and Trademarks
Washington, DC 20231

on December 23, 1993.

Steve T. Zelson
(name of person mailing paper)


(signature of person mailing paper)



THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT

In re Application of: ROSKILDE et al : Att. Doc. No.: 3573.214-US
 Serial No.: 08/054,913 : Attn: Art Unit 3307
 Filed: April 27, 1993 : Examiner: K. Asher
 For: NOSE PEN : Date: December 23, 1993

AMENDMENT FEE SHEET

Honorable Commissioner of Patents and Trademarks
 Washington, D.C. 20231

RECEIVED
JAN 26 94
GROUP 330

Sir:

The fee required to be filed with the accompanying amendment
 of even date herewith concerning the above-identified application
 has been calculated as follows:

Claims Remaining After Amendment	Highest No Previously Paid For	Present Extra	Rate	Add. Fee
TOTAL 16	MINUS 20	= 0	x22 =	\$ 0.00
INDEP 1	MINUS 3	= 0	x74 =	\$ 0.00
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM+				\$230.00 =
			TOTAL =	\$ 0.00

Please charge the required fee, estimated to be \$0.00, to
 Novo Nordisk of North America Inc. Deposit Account No.14-1447. A
 duplicate copy of this sheet is enclosed.

Respectfully submitted,

Steve T. Zelson (Reg. No. 30,335)
 Novo Nordisk of North America, Inc.
 405 Lexington Avenue, Suite 6200
 New York, New York 10017
 (212) 867-0123



PATENT
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: ROSKILDE et al : Att.Doc.No.:3573.214-US

Serial No.: 08/054,913 : Attn: Art Unit 3307

Filed: April 27, 1993 : Examiner: K. Asher

For: NOSE PEN : Date: December 23, 1993

AMENDMENT FEE SHEET

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

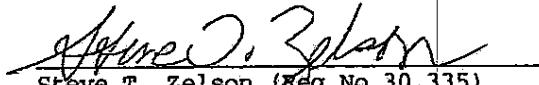
Sir:

The fee required to be filed with the accompanying amendment of even date herewith concerning the above-identified application has been calculated as follows:

Claims Remaining After Amendment	Highest No Previously Paid For	Present Extra	Rate	Add. Fee
TOTAL 16	MINUS 20	= 0	x22 =	\$ 0.00
INDEP 1	MINUS 3	= 0	x74 =	\$ 0.00
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIMS \$230.00 =				
TOTAL =				\$ 0.00

Please charge the required fee, estimated to be \$0.00, to Novo Nordisk of North America Inc. Deposit Account No. 14-1447. A duplicate copy of this sheet is enclosed.

Respectfully submitted,


 Steve T. Zelson (Reg.No.30,335)
 Novo Nordisk of North America, Inc.
 405 Lexington Avenue, Suite 6200
 New York, New York 10017
 (212) 867-0123



PATENT
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: ROSKILDE et al : Att.Doc.No.:3573.214-US

Serial No.: 08/054,913 : Attn: Art Unit 3307

Filed: April 27, 1993 : Examiner: K. Asher

For: NOSE PEN : Date: December 23, 1993

AMENDMENT PURSUANT TO 37 C.F.R. SECTION 1.115

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

In response to the Office Action of July 27, 1993, please consider the following amendments and remarks. The Outstanding Office Action indicated the application was in condition for allowance except for formal matters which have been addressed in this Amendment.

IN THE SPECIFICATION

Applicants, pursuant to the request in the Outstanding Office Action have included herewith an Abstract on a separate sheet of paper.

On page 1 line 25, please change "time spirit" to
--current trend--.

On page 2 lines 11-12 and 13, please change "unrotatably" to
--irrotational--.

On page 3 line 3, please change "0-30°" to
-- 0-30° --.

On page 4, line 20, please change "unrotatable" to
--irrotational--.

On page 7, line 5, please change "unrotatable" to
--irrotational--.

On page 7, line 18, please change "inrotatable" to
--irrotational--.

On page 8, line 12, please change "22" to
--21--.

IN THE CLAIMS

Please amend claim 1 as follows:

1. (FIRST AMENDMENT) A device for nasal administration of a number of measured doses of a liquid medicine, especially insulin, comprising a first and a second housing element [coupled] and means coupling said housing elements together to allow rotation but no axial displacement of the first housing element (1) with respect to the second housing element (2), said first housing element (1) comprising a cartridge containing the liquid ^{medicine} and being sealed by a piston (21) at ^{its} ^{first} end coupled to the second housing element (2) and being at its other end closed by a valve (7,9) to communicate the liquid in the cartridge with a spray nozzle (12) when opened, characterized in that the device further comprises a threaded piston rod (22) engaging the piston (21) of the cartridge [unrotatably] irrotational with respect to the first housing element (1) and disposed in the second housing element (2) to move axially therein, a nut element (27) mounted [unrotatably]

C
 C
 B1 C
 B2
 DAS
 C2

irrotational but axially displaceably in the second housing element (2) and engaging the thread of the piston rod (22), a helical spring (32) abutting at its one end an internal annular abutment on the second housing element (2) and at its other end a shoulder on the nut element (27) to press ~~this~~^{the} nut element and thereby the piston rod (22) and the piston (21) in the [directions] direction towards the outlet end of the cartridge to set ^{Medicine} setting the liquid therein under pressure, to be released by means opening of the valve (7,9) for spraying out a dose of the liquid the housing elements (1,2), the ^{piston} rod (22), and the nut element (27) cooperating so that relative rotation between the housing elements (1,2) in a selected direction causes relative rotation between the rod (22) and the nut element, making the nut element move axially in the second housing element (2) in a direction to compress the helical spring (32).

Please amend claim 3 as follows:

In line one please delete the term "or 2".

Please amend claim 4 as follows:

In line one please delete the term "any of the preceding claims" and replace it with --claim 1--.

Please amend claim 5 as follows:

In line one please delete the term "any of the preceding claims" and replace it with --claim 1--.

Please amend claim 6 as follows:

In line one please delete the term "any of the preceding claims" and replace it with --claim 1--.

Please amend claim 7 as follows:

In line one please delete the term "any of the preceding claims" and replace it with --claim 1--.

Please amend claim 13 as follows:

In line one please delete the term "any of the preceding claims" and replace it with --claim 1-- and

In line 2 please delete the term "unrotatable" and replace it with --irrotational--.

Please amend claim 14 as follows:

In line one please delete the word "claims" and replace it with --claim--.

Please amend claim 16 as follows:

In line one please delete the word "claims" and replace it with --claim--.

R E M A R K S

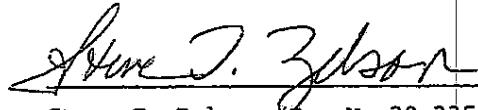
Reconsideration of the application is requested in view of the above amendments and the following remarks. The Specification and Claims 1, 3, 4, 5, 6, 7, 13, 14 and 16 have been amended herein in order to correct certain informalities in order to place the application in condition for allowance.

Applicants have also filed concurrently herewith an Extension of Time extending the time to respond to the Outstanding Office Action by three months to and including December 27, 1993.

Applicants have made all of the changes suggested in the instant Office Action. Specifically concerning the changes to the specification, Applicants note that "time spirit", which is found in Websters Dictionary, means "current trend". In addition, "unrotatable" has been changed to the equivalent term found in Websters Dictionary, "irrotational".

Therefore, in view of the foregoing amendments, Applicant respectfully submits that all claims are in condition for allowance. Early action to that end is respectfully requested. The Examiner is hereby invited to contact the undersigned by telephone if there are any questions concerning this amendment or application.

Respectfully submitted,



Steve T. Zelson (Reg. No. 30,335)
Novo Nordisk of North America, Inc.
405 Lexington Avenue, Suite 6200
New York, New York 10017
(212) 867-0123



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address : COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/054,913	04/27/93	ROSKILDE	J 2572-214US

STEVE T. ZELSON NOVO NORDISK OF NORTH AMERICA, INC., 405 LEXINGTON AVENUE, STE. 6200 NEW YORK, NY 10174-6201	F3M1/0203	ASHER, K EXAMINER
	ART UNIT	PAPER NUMBER
	3207	12
	DATE MAILED:	

02/03/94

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

1. The communication filed 10/23/93 is informal/non-responsive for the reason(s) checked below and should be corrected.
APPLICANT IS GIVEN ONE MONTH FROM THE DATE OF THIS LETTER OR UNTIL THE EXPIRATION OF THE PERIOD FOR RESPONSE SET IN THE LAST OFFICE ACTION (WHICHEVER IS LONGER) WITHIN WHICH TO CORRECT THE INFORMALITY.

*30 days
ESB*

- a. The amendment to claim(s) _____, filed _____, fails to comply with the provisions of 37 C.F.R. 1.121 and is accordingly held to be non-responsive. A supplemental paper correcting the informal portions and complying with the rule is required.
 - b. The paper is unsigned. A duplicate paper or ratification, properly signed, is required.
 - c. The paper is signed by _____, who is not of record. A ratification or a new power of attorney with a ratification, or a duplicate paper signed by a person of record, is required.
 - d. The communication is presented on paper which will not provide a permanent copy. A permanent copy, or a request that a permanent copy be made by the Office at applicant's expense, is required, see M.P.E.P. 714.07.
 - e. Other *Amendment appears to be a bona fide attempt to correct the informalities present, however, numerous informalities remain that must be corrected.*
2. In accordance with applicant's request, THE PERIOD FOR RESPONSE FROM THE OFFICE ACTION DATED _____ IS EXTENDED TO RUN _____ MONTH(S).
 No further extension will be granted unless approved by the Commissioner, 37 C.F.R. 1.136 (b).
3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119 which papers have been made of record in the file.
4. Other

EDGAR S. BURR
S.P.E.
GROUP ART UNIT 337



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

08/054913

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKETT NO.
---------------	-------------	-----------------------	----------------------

EXAMINER

ART UNIT

PAPER NUMBER

#13

DATE MAILED:

EXAMINER INTERVIEW SUMMARY RECORD

All participants (applicant, applicant's representative, PTO personnel):

- (1) M. Steve Belson (3)
 (2) E. Kimberly Fisher (4)

Date of interview February 3, 1994Type: Telephonic Personal (copy is given to _____) applicant applicant's representative).Exhibit shown or demonstration conducted: Yes No. If yes, brief description: _____Agreement was reached with respect to some or all of the claims in question. was not reached.Claims discussed: 1, 7, 8, 11, 12, 814-16Identification of prior art discussed: n/a

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: The Examiner called to suggest an Examiner's Amendment to correct minor informalities in the claims.
Mr. Belson authorized the Ex's Amendment.

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

1. It is not necessary for applicant to provide a separate record of the substance of the interview.

Unless the paragraph below has been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW (e.g., items 1-7 on the reverse side of this form). If a response to the last Office action has already been filed, then applicant is given one month from this interview date to provide a statement of the substance of the interview.

2. Since the examiner's interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action. Applicant is not relieved from providing a separate record of the substance of the interview unless box 1 above is also checked.



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAME OF APPLICANT	ATTORNEY DOCKETT NO.
---------------	-------------	-------------------------	----------------------

	EXAMINER
--	----------

ART UNIT	PAPER NUMBER
----------	--------------

DATE MAILED:

13

EXAMINER INTERVIEW SUMMARY RECORD

All participants (applicant, applicant's representative, PTO personnel):

(1) *Mr. Steve Belson* (3)(2) *Ex. Kimberly Fisher* (4)Date of interview *February 3, 1994*Type: Telephonic Personal (copy is given to applicant applicant's representative).Exhibit shown or demonstration conducted: Yes No. If yes, brief description: _____Agreement: was reached with respect to some or all of the claims in question. was not reached.Claims discussed: *1, 7, 8, 11, 12, 814-160*Identification of prior art discussed: *n/a*

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: *The Examiner called to suggest an Examiner Amendment to correct minor informalities in the claims. Mr. Belson authorized the Ex's. Amendment.*

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

1. It is not necessary for applicant to provide a separate record of the substance of the interview.

Unless the paragraph below has been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW (e.g., items 1-7 on the reverse side of this form). If a response to the last Office action has already been filed, then applicant is given one month from this interview date to provide a statement of the substance of the interview.

2. Since the examiner's interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action. Applicant is not relieved from providing a separate record of the substance of the interview unless box 1 above is also checked.

Kimberly L. Fisher
Examiner's Signature



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

08/054,913		SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/054,913 04/27/93				ROSENBLUM	J 3573.214US
					EXAMINER
				ASHER, K	
				F3M1/0208	
					ART UNIT
					PAPER NUMBER
					14/C
				3307	DATE MAILED:
				02/08/94	

STEVE T. NELSON
NOVO NORDBIK OF NORTH AMERICA, INC.
405 LEXINGTON AVENUE, STE. 5200
NEW YORK, NY 10174-5201

NOTICE OF ALLOWABILITY

PART I.

1. This communication is responsive to The telephone int. of 3/27/94 and Ex's Amendment.
 2. All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
 3. The allowed claims are 1-16
 4. The drawings filed on 11/3/92 are acceptable.
 5. Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has X been received. [] not been received. X been filed in parent application Serial No. 07/793,412 filed on 11/3/92. copied here
6. Note the attached Examiner's Amendment.
 7. Note the attached Examiner Interview Summary Record, PTOL-413.
 8. Note the attached Examiner's Statement of Reasons for Allowance.
 9. Note the attached NOTICE OF REFERENCES CITED, PTO-892.
 10. Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

PART II.

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

1. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
 2. APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
 a. Drawing informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. _____. CORRECTION IS REQUIRED.
 b. The proposed drawing correction filed on _____ has been approved by the examiner. CORRECTION IS REQUIRED.
 c. Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
 d. Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER.

Attachments:

- Examiner's Amendment
- Examiner Interview Summary Record, PTOL-413
- Reasons for Allowance
- Notice of References Cited, PTO-892
- Information Disclosure Citation, PTO-1449

- Notice of Informal Application, PTO-152
- Notice re Patent Drawings, PTO-948
- Listing of Bonded Draftsmen
- Other

* The title has been changed to --Device for Oral Delivery
of Liquid Medications --

EDGAR S. BURR
S.P.E.
GROUP ART UNIT 237

Serial No. 88/854,913
Art Unit 3307

5 An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the Issue Fee.

In claim 1, 18 line 7, "the" was deleted, and --medicine--
was inserted after "liquid"; in
line 8, "the" (first occurrence) was
replaced with --a first--; in
line 18, --medicine-- was inserted after
"liquid", and --upon opening of
valve
said cartridge-- was inserted after 20
"nozzle (12)"; in
line 11, "when opened" was deleted; in
line 18, "its" was deleted; in
line 20, "this" was replaced by --the--; in
line 22, "the" was replaced with --an--, and
--to set-- was inserted after
"cartridge"; in
line 23, "setting" was deleted, --medicine--
was inserted after "liquid", a
comma was added after "pressure",
and "to be released by" was
deleted; in
line 24, "opening of the valve (7,9)" was
replaced with --means--, and

1132

Serial No. 08/054,913
Art Unit 3307

		--medicine under pressure upon opening said valve-- was inserted
C&	5	after "liquid"; in line 25, --piston-- was inserted before "rod"; and in line 28, a comma was inserted after "element", (first occurrence). line 1, --further-- was inserted before "characterized"; in line 2, "that it has" was deleted; and in line 3, "abutting when mounted there on" was replaced with --having abutting edges that abut corresponding abutting edges on--.
CB	10	
	15	In claim 8, line 3, "to measure" was replaced with --for measuring--. In claim 11, line 2, --of the protective cap and the second housing element-- was inserted after "edges".
	20	In claim 12, lines 2 and 3, "edge" was replaced with --edges--. In claim 14, line 2, "limiting is" was replaced with --and limits--; and in
		70 3

Serial No. 88/054,918
Art Unit 3307

~~line 3,~~ --of the nut element-- was inserted after "movement".

In claim 15, ~~line 1,~~ "13" was changed to --14--, and "abutting" was replaced with

--abutment between--; and in "faces of" was deleted.

In claim 16, ~~line 1,~~ "14" was changed to --15--; in

~~line 6,~~ "the" (first occurrence) was replaced with --an--, and "this" was replaced with --the--; in

~~line 4,~~ "this" was replaced with --the--, and --of the second housing element-- was inserted after "end"; and in

~~line 5,~~ "anti-rotary" was replaced with --anti-rotation--, and "member" was replaced with --element--.

These changes were made to provide claim definiteness, proper antecedent basis, and proper claim dependencies.

Authorization for this Examiner's Amendment was given in a telephone interview with Mr. Steve Zelson on February 4, 1994.

An inquiry concerning this communication should be directed to K. L. Asher at telephone number (703) 309-8358.

K. L. Asher
February 03, 1994

Edgar S. Burr
EDGAR S. BURR
S.P.E.
GROUP ART UNIT 337



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: Box ISSUE FEE
COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

F3M170208

STEVE T. ZELSON
NOVO NORDISK OF NORTH AMERICA, INC.
405 LEXINGTON AVENUE, STE. 6200
NEW YORK, NY 10174-6201

Note attached communication from the Examiner

This notice is issued in view of applicant's communication filed

NOTICE OF ALLOWANCE
AND ISSUE FEE DUE

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
First Name 08/054,913 Applicant	04/27/93	016	ASHER, R	3307 02/06/94

TITLE OF INVENTION JORN R.

DEVICE FOR NASAL DELIVERY OF LIQUID MEDICATIONS
(AS AMENDED)

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEES DUE	DATE DUE

THE FEE DUE IS THE AMOUNT IN EFFECT AT THIS TIME. IF THE AMOUNT OF THE ISSUE FEE INCREASES PRIOR TO PAYMENT, APPLICANT WILL BE NOTIFIED OF THE BALANCE OF ISSUE FEE DUE.

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT.

PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

- I. Review the SMALL ENTITY Status shown above.
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:
 - A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the patent and Trademark Office of the change in status, or
 - B. If the Status is the same, pay the FEE DUE shown above.
- II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, Part C of this notice should also be completed and returned.
- III. All communications regarding this application must give series code (or filing date) and serial number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to contrary.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

IMPORTANT REMINDER: Patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTO UTILITY GRANT
Paper Number 15

The
United
States
of
America



The Commissioner of Patents
and Trademarks

*Has received an application for a patent
for a new and useful invention. The title
and description of the invention are en-
closed. The requirements of law have
been complied with, and it has been de-
termined that a patent on the invention
shall be granted under the law.*

Therefore, this

United States Patent

*Grants to the person or persons having
title to this patent the right to exclude
others from making, using or selling the
invention throughout the United States
of America for the term of seventeen
years from the date of this patent, sub-
ject to the payment of maintenance fees
as provided by law.*

Bruce Lehman

Commissioner of Patents and Trademarks

Murielle Haller
Attest

PTO-1584

(RIGHT INSIDE)

FH-LDM

SAN00941697



US005331954A

United States Patent [19]

Rex et al.

[11] Patent Number: **5,331,954**
 [45] Date of Patent: **Jul. 26, 1994**

[54] **DEVICE FOR NASAL DELIVERY OF LIQUID MEDICATIONS**

[75] Inventors: Jorn Rex, Roskilde; Kim Steengaard, Hvidovre; Svend Elk, Birkerød, all of Denmark

[73] Assignee: Novo Nordisk A/S, Bagsvaerd, Denmark

[21] Appl. No.: **54,913**

[22] Filed: **Apr. 27, 1993**

Related U.S. Application Data

[63] Continuation of Ser. No. 793,412, Jan. 13, 1992, abandoned.

Foreign Application Priority Data

Dec. 21, 1990 [DK] Denmark 3038/90

[51] Int. Cl. A61M 15/08; A61M 11/00; A61M 5/00; A62B 7/00

[52] U.S. Cl. 128/200.22; 128/207.18; 128/200.14; 604/232; 604/211

[58] Field of Search 128/200.14, 200.18, 128/200.19, 200.22, 203.12, 203.19, 203.21, 203.22, 203.23, 207.18; 604/207-209, 211, 218, 232, 135

[56] References Cited**U.S. PATENT DOCUMENTS**

4,405,308	9/1983	Jessup	.....	128/200.22
4,413,760	11/1983	Paton	.....	604/309
4,498,904	2/1985	Turner et al.	.....	604/211

4,962,868	10/1990	Borchard	.....	232/49
4,973,314	11/1990	Holm et al.	.....	604/211
5,017,190	5/1991	Simon et al.	.....	604/209
5,104,380	4/1992	Holman et al.	.....	604/232
5,112,317	5/1992	Michel	.....	604/232
5,114,406	5/1992	Gabriel et al.	.....	604/232

FOREIGN PATENT DOCUMENTS

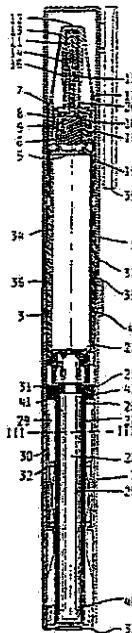
0308100	3/1989	European Pat. Off.	.....
WQ91/15303	10/1991	PCT Int'l Appl.	.....
1379688	1/1975	United Kingdom	.....

Primary Examiner—Edgar S. Burr
 Assistant Examiner—Kimberly L. Asher
 Attorney, Agent, or Firm—Steve T. Zelson

[57] ABSTRACT

A pen shaped device for nasal administration of doses of a liquid medicine, comprising a first and a second housing element, the first housing element (1) comprising a cartridge for the medicine, this cartridge being at one end closed by a piston (21) and being at its other end closed by a valve (7,9), which may be opened to connect the cartridge to a spray nozzle (12). When the two housing elements are rotated relatively to each other, a nut member (27) is proportional to the rotation moved along a threaded piston rod (22) to compress helical spring (32) to act via the nut element (27) and the piston rod (22) on the piston (21) to put the content of the cartridge under pressure, which pressure may be released by opening the valve (7,9) to lead the medicine in the cartridge to the nozzle (12).

16 Claims, 2 Drawing Sheets

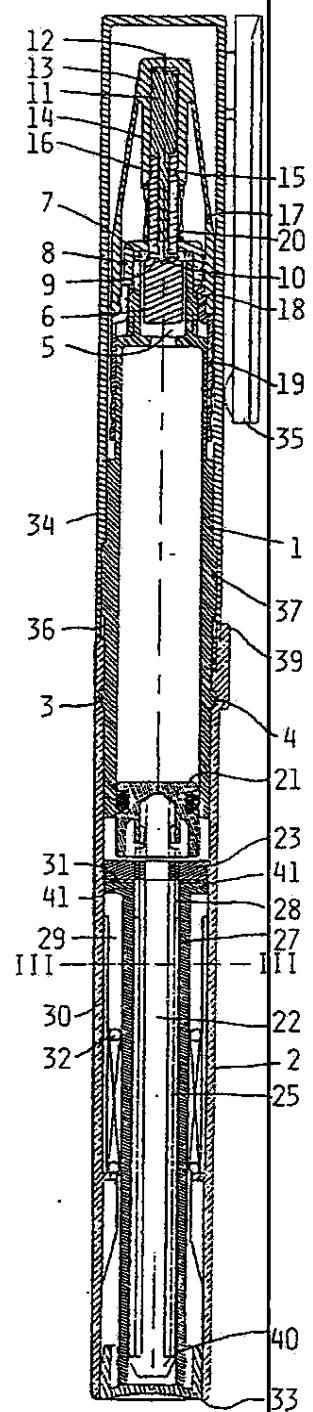


U.S. Patent

July 26, 1994

Sheet 1 of 2

5,331,954



1/2

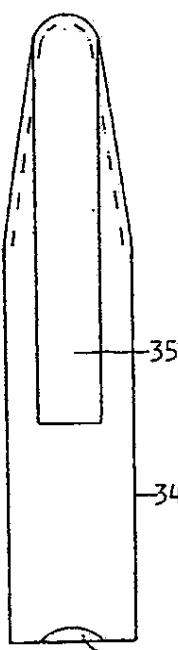


Fig. 2

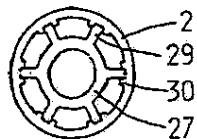


Fig. 3

U.S. Patent

July 26, 1994

Sheet 2 of 2

-- 5,331,954

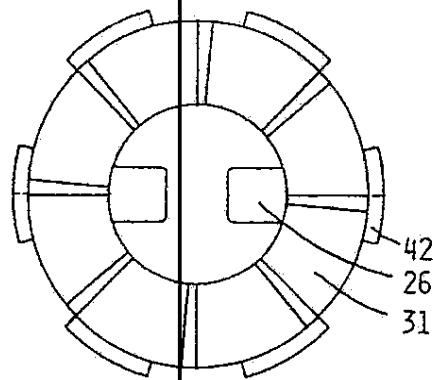


Fig. 4

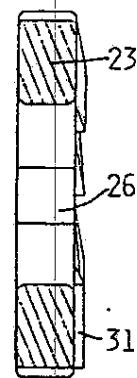


Fig. 5

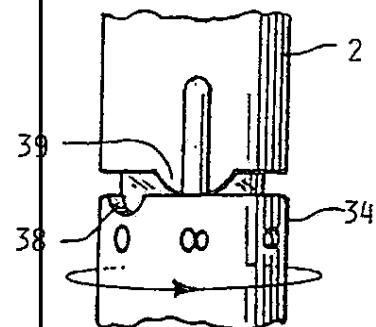


Fig. 6

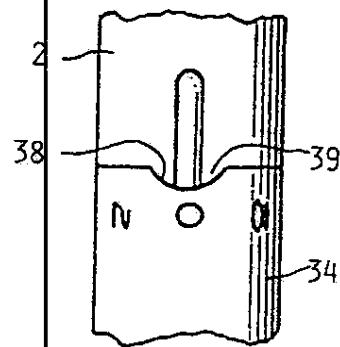


Fig. 7

5,331,954

1

2

DEVICE FOR NASAL DELIVERY OF LIQUID MEDICATIONS

This application is a continuation application of co-pending application Ser. No. 07/793,412, filed Jan. 13, 1992, now abandoned.

The invention concerns a dispensing device for dispensing dosed quantities of a fluid medicine as an aerosol, e.g. insulin, to be assimilated through the nasal mucous membranes.

Many sorts of medicine are not appropriate for being orally consumed as they are destroyed very quickly in the alimentary canal. Such medicines, therefore, have to be injected to be directly assimilated in the blood.

When such medicines have to be taken frequently through a long period or even the life long as it is the case with, e.g. insulin for diabetics, the wish for a method of taking the medicines without frequent injections occurs. Here the assimilation through the nasal mucous membranes is seen as a solution.

From European Patent Application No. 308,100 is known a dispensing apparatus for dispensing metered quantities of pressurized fluid and in particular for nasal administration of insulin.

EP 308,100 meets the wishes for a device which may be used for nasal administration of e.g. insulin, as an activation of the device releases a metered quantity of liquid. However, the amount of liquid released by each activation is preset by the manufacturer of the spray valve, and if a bigger dose than this preset one is wanted, the device must be activated repetitively until the wanted dose is dispensed.

The use of a propellant gas as in EP 308,100 is undesirable for more reasons. First of all, precaution should be taken to assure that the propellant gas is kept out of contact with the medicine. Further, the content of sufficient propellant gas to dispense the total content of medicine involves the risk that an overdose is dispensed if the metering valve fails. Finally, as the device is intended to be disposed of when the medicine content is used up, it is against the current trend to use disposable devices containing propellant gases.

Consequently, it is the object of the invention to provide a dispensing apparatus for nasal administration of medicine such as insulin in preset doses without the use of a propellant gas. Another object is to provide a device which has the same neutral pen shape as the known pen syringes for subcutaneous injection of insulin.

This is obtained by a device for nasal administration of a number of measured doses of a liquid medicine, especially insulin, comprising a first and a second housing element coupled together to allow rotation but no axial displacement of the first housing element with respect to the second housing element, said first housing element comprising a cartridge containing the liquid and being sealed by a piston at the end coupled to the second housing element and being at its other end closed by a valve to communicate the liquid in the cartridge with a spray nozzle when opened, the device according to the invention being characterized in that it further comprises a threaded piston rod engaging the piston of the cartridge irrotational with respect to the first housing element and disposed in the second housing element to move axially therein, a nut element mounted irrotational but axially displaceably in the second housing element and engaging the thread of the

piston rod, a helical spring abutting at its one end an internal annular abutment on the second housing element and at its other end a shoulder on the nut element to press this nut element and thereby the piston rod and the piston in the directions towards the outlet end of the cartridge setting the liquid therein under pressure to be released by opening the valve for spraying out a dose of the liquid, the housing elements, the rod, and the nut cooperating so that relative rotation between the housing elements in a selected direction causes relative rotation between the rod and the nut element making the nut element move axially in the second housing element in a direction to compress the helical spring.

The device according to the invention further provides a dispenser which will work in all positions and in which the liquid remains sterile as no unclean air is to replace the liquid removed from the cartridge during the spraying.

According to the invention, the piston rod may be snap locked into the piston preventing a possible vacuum, which may emerge in the cartridge, from drawing the piston into the cartridge leaving an axial play between the piston rod and the piston.

To ensure that the liquid will hit the part of the nasal mucous membrane which is effective in assimilating the medicine, the nozzle is appropriately made to spray out the liquid at an angle of 0°-30° defining the spray as ranging from a jet spray to a fan shaped spray.

The nut element may define at least one radially protruding axially extending projection on an exterior portion thereof, and this projection or these projections may be received in one or more corresponding axially extending groove or grooves in an inner portion of the second housing element thereby providing a coupling between this housing element and the nut element ensuring that the nut element may be rotated with the second housing element and be axially displaced in this housing element.

A stop may be provided limiting the axial movement of the nut element into the second housing element, thus limiting the loading of the device to a set maximum dose.

Also the movement of the nut element along the piston rod may be limited to avoid setting a larger dose than actually remains in the cartridge.

In a preferred embodiment of the invention, the device has a removable protective cap configured to receive the first housing element and abutting when mounted there on the second housing element; and means for releasably coupling the protective cap and the first housing element for rotation together, so that rotation of the protective cap with respect to the second housing element causes rotation of the first housing element with respect to the second housing element.

The abutting edges of the second housing element and the protective cap may comprise pointing means and scale means, respectively, to measure the relative rotation of the protective cap, and thereby the first housing element, with respect to the second housing element. The displacement of the nut element is proportional to this relative rotation and the measuring of the relative rotation consequently is a measuring of the set dose.

Means may be provided for providing detents at selected rotational positions of the first housing element with respect to the second housing element making the extent of the relative rotation hearable, tactile, and visible as a click is heard and a resistance variation is felt

5,331,954

3

each time a detent is passed during the relative rotation the size of which may be seen from the relative position of the pointing means and the scale.

The coupling means for coupling the protective cap to the first housing element may allow the protective cap to receive the first housing element in multiple different angular positions of the protective cap with respect to the first housing element to allow the protective cap to be oriented at a selected position with respect to the second housing element, regardless of the 10 detent rotational position of the first housing element in the second housing element. This way it is always possible to mount the protective cap in position with the "O" of its scale in line with the pointing means on the second housing element.

By the abutting edges having interlocking means for defining a selected angular position of the protective cap with respect to the second housing element it may be ensured that the cap is mounted in its O-position when the pen is stored away after use. The interlocking means may appropriately comprise a recess on the abutting edge of the protective cap and a projection on the abutting edge of the second housing element, the projection being shaped to fit into the recess to define the selected position.

In a preferred embodiment of the device according to the invention, the piston rod is made irrotational by fitting through an opening in an anti-rotation disc, the opening being circular with at least one projection protruding into the opening, by the piston rod having a corresponding profile with recesses corresponding to the projections, and by the anti-rotary disc being at its periphery provided with alternating spaces and teeth fitting into a castellated end of the first housing element. Further, the anti-rotary disc serves as an abutment for the nut element limiting the movement of this element towards the cartridge.

The abutting faces of the nut element and the anti-rotary disc are shaped as annular ramps which when in mutual abutment allow only relative rotation of the first and second housing elements in a device loading direction. Thereby it is precluded that a relative rotation in a direction to unload the device to annul a set dose is continued when the device is unloaded. Such a continued relative rotation could draw the piston rod free of 45 the piston and provide an axial play which would undermine the correct dosing.

In a preferred embodiment, the nut element may have a tubular extension coaxially surrounding the piston rod and terminated by a knob at the outer end of the second housing element, this knob being flush with the edge of this outer end, when the annular ramps of the anti-rotary disc and the nut member are in a mutual abutment giving a tactile and visible indication whether the device is loaded or not.

In the following the invention is specified in further detail with reference to the drawing in which

FIG. 1 shows a plan view of a dispenser according to the invention,

FIG. 2 shows a plan view of the protective cap,

FIG. 3 shows a sectional view along the line III—III in FIG. 1, but without the piston rod,

FIG. 4 shows an enlarged plan view of the anti-rotary disc,

FIG. 5 shows a side view of the disc in FIG. 4.

FIG. 6 shows an enlarged detail of the abutting edges of the protective cap and the second housing element in dose setting position, and

4

FIG. 7 shows the detail of FIG. 6 in closed position for storing.

FIG. 1 shows a pen shaped device having a first housing element 1 and a second housing element 2 snapped together by an external bead 3, and the first housing element 1 being snapped into an annular groove 4 in the second housing element 2 permitting the two housing elements to be rotated in relation to each other about the common length axis, but not to be displaced in relation to each other along this axis.

The first housing element 1 forms a cartridge for a liquid medicine and is at its one end provided with a neck forming a valve chamber 5 communicating at its one end with the housing element and being at its other end closed by a valve block 6 fitting into an annular sealing 7 fitted to the valve chamber 5 by a ferrule 8. The valve block has radial ducts 9 leading to a central bore 10 and being at the outer ends sealed by the inner cylindric surface of the annular sealing 7 when the valve is closed. An inner element 11 of a spray nozzle has a rod fitting into the bore 10 with a small clearance leaving a duct leading to a spray nozzle 12 in a nozzle element 13 surrounding the inner element 11 leaving a fine duct from the bore 10 to the nozzle 12.

The nozzle element 13 is provided with a tubular central part 14 fitting over the part with the bore 10. An internal annular bead 15 in the part 14 is lodged in an annular groove 16 in the part with the central bore.

The nozzle element 13 further comprises a skirt 17 surrounding at some distance the tubular central part 14 and being at its edge snapped on the neck 18 of a release member 19 fitting over the outer end of the cartridge, the neck 18 of the release member 19 being so much shorter than the neck of the cartridge that it may be axially displaced along the neck of the cartridge limited by its outer end abutting the ferrule or by its shoulder abutting the shoulder of the cartridge.

The nozzle element and release member 19 are kept in their position with the neck 18 of the release member 19 abutting the ferrule 8 by a helical spring 20 surrounding the central part 14 of the nozzle element 13 abutting at its one end the ferrule 8 and at its other end a contact face between the central part 14 and the skirt 17 of the nozzle element 13. In this position the radial ducts 9 lie opposite the sealing 7 and the valve is closed. When the release member 19 is displaced in its axial direction to bring its internal shoulders in abutment with the outer shoulders of the cartridge, the radial ducts 9 are passed past the sealing 7 and into the valve chamber 5 and a communication between the liquid in the cartridge is established through the chamber 5, the radial ducts 9, the bore 10 and the clearance between the inner element 11 and the nozzle element 13 to the spray nozzle 12. This way the liquid in the cartridge will be sprayed out through the nozzle 12 when set under pressure as described below.

The pressure in the cartridge is provided by exerting upon a piston 21, which closes the end of the cartridge opposite the neck, a force trying to force this piston into the cartridge. A sealing element, which here is shown as an O-ring mounted in a circumferential groove in the piston, provides a sealing between the piston and the cartridge wall.

A piston rod 22 engaging the piston 21 protrudes through an anti-rotary disc 23 mounted at the end of the first housing element 1 to make the piston rod irrotational in relation to this housing element.

5,331,954

5

This may be obtained by the disc, as shown in FIGS. 4 and 5 having spaced teeth 42 along its periphery fitting into a castellated end of the first housing element and by the piston rod having a non-circular profile fitting into a corresponding central opening in the disc. The piston rod is a mainly cylindric, threaded rod having diametrically opposite axial recesses 25 engaged by corresponding diametrically opposite projections 26 in the mainly circular opening of the anti-rotary disc.

The mainly cylindric piston rod 22 is threaded and is surrounded by a nut element 27 having at its end facing and abutting the anti-rotary disc a short internal thread 28, the rest of the inner surface of the nut element 27 being smooth fitting over the threaded piston rod to guide this rod in its axial movement. The nut element has at its threaded end external axial ribs 29 engaging internal axial grooves in the second housing element 2 making the nut element 27 irrotational, but axially displaceable in this housing element.

The grooves in the second housing element are each defined by pairs of spaced internal projections 30 in the second housing element. Together with the ribs 29 ending in a plate 41 at the end abutting the anti-rotary disc the projections 30 define a stop for the movement of the nut element as the plate 41 fits closely into the circular bore of the second housing element and consequently will abut the ends of the projections 30 when the nut element is displaced into the second housing element. Thereby the maximal loading of the device is limited.

When the piston rod 22 is rotated relatively to the nut element 27 in one direction by rotating the first housing element relatively to the second housing element the nut element is moved away from its abutment 31 on the anti-rotary disc 23 and is displaced further into the second housing element compressing a helical spring 32 abutting at its one end the nut element and at its other end a protrusion on the inner surface of the tubular second housing element. The compressed spring 32 will try to press the nut element back to abut the disc 23, and this force exerted on the nut member will be transmitted to the piston rod and the piston through the threads in the nut element on the piston rod, thereby setting the content of the cartridge under pressure. This pressure may be released by operating the valve to spray out the preselected dose of the medicine in the cartridge. During this spraying the piston is moved into the cartridge until the nut member abuts the disc 23 again.

At its end opposite the piston the piston rod is provided with a head 40 limiting the movement of the nut element along the piston rod to assure that a dose exceeding the remaining liquid in the cartridge may not be preset.

The engagement between the piston rod 22 and the piston 21 is performed as a snap lock. This way the piston 21 may be driven into the cartridge by the piston rod 22, the snap lock connection being flexible to permit the piston to follow marginal volume variations caused by temperature variations.

The loading of the device by turning the housing elements 1 and 2 in one direction relatively to each other may also be annulled by rotating the two housing elements in the opposite direction relatively to each other until the nut element is displaced to abut the disc again. The mutually abutting surfaces of the nut element and the disc 23 are provided with respective ramps to prevent further relative rotation in this direction when the nut member abuts the disc. This way it is prevented that a further relative rotation of the housing elements

6

in this direction will cause the piston rod to be drawn out of engagement with the piston.

The end of the tubular nut element opposite the disc is provided with a knob 33 having an outer cylindric surface fitting guidingly into the bore of the tubular second housing element and an end surface flush with the end edge of the second housing element when the device is not loaded. When the device is loaded and the nut element is displaced away from the disc, the knob is protruding from the end of the second housing element giving a tactile and visible information of the status of the device, i.e. whether the device is loaded or not.

The spray nozzle element 13 is covered by a cap 34 when the device is not in use. This cap is provided with a clip 35, so that it can be carried in a pocket like a pencil. The cap 34 fits over the first housing element 1 and when fitted on is adjacent to and flush with the second housing element 2. The adjacent edges of the second housing element 2 and the cap 34 are provided with a projection 38 and a corresponding recess 39, respectively, the projection engaging the depression when the cap is fitted on.

The cap is provided with internal grooves 36 engaged by external ribs 37 on the first housing element 1. Thereby the cap can be used for rotating the first housing element 1 relatively to the second housing element 2 when the cap is appropriately axially displaced on the first housing element to bring the projection 38 out of engagement with the recess 39. The projection 39 is made as an arrow pointing on a scale on the cap, so that a dosing measured in units may be set by the turning of the two housing elements relatively to each other. The rotatable connection between the two housing elements is provided with a click mechanism providing a hearable and perceptible click at each two units set.

When the dose is set, the cap is removed from the device and the nozzle element is inserted in a nostril, and the release member 19 is pulled further over the first housing element to release the dose which is sprayed out through the nozzle at an angle of 0°-30°. After use the cap is again fitted over the first housing element in a rotary position making the projection 38 engage the depression 39.

The first housing element forming the cartridge is made of a transparent material allowing the position of the piston to be observed to decide how much liquid is left. For this purpose the first housing element may be provided with a scale. When the cartridge is empty, the device may be disposed of.

Although the device is described with the cartridge forming an integral part of the first housing element, an embodiment wherein a separate cartridge is received in the first housing element will be within the scope of the invention. The device may also be a durable one in which only the cartridge and possibly the valve and the spray nozzle are changed when the cartridge is empty, whereas the dose setting mechanism is reused as a durable part.

The device is preferably used for dosing insulin which may be assimilated through the nasal mucous membranes, but it may also be used for the administration of other kinds of medicine which should be added as a spray in preset doses, e.g. for curing eczema.

We claim:

1. A device for nasal administration of a number of measured doses of a liquid, medicine, especially insulin, comprising a first and a second housing element and means coupling said housing elements together to allow

5,331,954

7

rotation but no axial displacement of the first housing element (1) with respect to the second housing element (2), said first housing element (1) comprising a cartridge containing liquid medicine and being sealed by a piston (21) at a first end coupled to the second housing element (2) and being at its other end closed by a valve (7.9) to communicate the liquid medicine in the cartridge with a spray nozzle (12) upon opening of said valve characterized in that the device further comprises a threaded piston rod (22) engaging the piston (21) of the cartridge irrotational with respect to the first housing element (1) and disposed in the second housing element (2) to move axially therein, a nut element (27) mounted irrotational but axially displaceably in the second housing element (2) and engaging the thread of the piston rod (22), a helical spring (32) abutting at one end an internal annular abutment on the second housing element (2) and at its other end a shoulder on the nut element (27) to press the nut element and thereby the piston rod (22) and the piston (21) in the direction towards an outlet end of the cartridge to set the liquid medicine therein under pressure, means for spraying out a dose of the liquid medicine under pressure upon opening said valve, the housing elements (1,2), the piston rod (22), and the nut element (27) cooperating so that relative rotation between the housing elements (1,2) in a selected direction causes relative rotation between the rod (22) and the nut element, making the nut element move axially in the second housing element (2) in a direction to compress the helical spring (32).

2. A device according to claim 1, characterized in that the piston rod (22) is snap locked into the piston (21).

3. A device according to claim 1, characterized in that the nozzle (12) sprays out the liquid at an angle of 0°-30°.

4. A device according to claim 1, characterized in that the nut element (27) defines at least one radially protruding, axially extending projection (29) on an exterior portion thereof; and the projection is received in an axially extending groove in an inner portion of the second housing element (2).

5. A device according to claim 1, characterized in that a stop (30,41) is provided limiting axial movement of the nut element (27) into the second housing element (2).

6. A device according to claim 1, characterized in that a stop (40) is provided limiting the movement of the nut element (27) along the piston rod (22).

7. A device according to claim 1, further characterized in a removable protective cap (34) configured to receive the first housing element (1) and having abutting edges that abut corresponding abutting edges on the second housing element (2); and means (36,37) for releasably coupling the protective cap (34) and the first housing element (1) for rotation together, so that rotation of the protective cap (34) with respect to the second housing element (2) causes rotation of the first housing element (1) with respect to the second housing element (2).

8

8. A device according to claim 7, characterized in that the abutting edges of the second housing element (2) and the protective cap (34) comprise pointing means and scale means, respectively, for measuring the relative rotation of the protective cap (34) with respect to the second housing element (2).

9. A device according to claim 8, characterized in that means are provided for providing detents at selected rotational positions of the first housing element (1) with respect to the second housing element (2).

10. A device according to claim 9, characterized in that the coupling means (36,37) allow the protective cap (34) to receive the first housing element (1) in multiple different angular positions of the protective cap (34) with respect to the first housing element (1) to allow the protective cap (34) to be oriented at a selected position with respect to the second housing element (2), regardless of the detent rotational position of the first housing element (1) in the second housing element (2).

20. 11. A device according to claim 10, characterized in that the interlocking means comprise a recess (38) on the abutting edges of the protective cap (34) and a projection (39) on the abutting edges of the second housing element (2), the projection (39) being shaped to fit into the recess (38) to define the selected position.

12. A device according to claim 9, characterized in that the abutting edges of the protective cap and the second housing element have interlocking means (38,39) for defining a selected angular position of the protective cap (34) with respect to the second housing element (2).

13. A device according to claim 1, characterized in that the piston rod (22) is made irrotational with respect to the first housing element (1) by fitting through an opening in an anti-rotation disc (23), the opening being mainly circular with at least one projection (26) protruding into the opening, by the piston rod (22) having a corresponding profile with recesses (25) corresponding to the projections (26), and by the anti-rotation disc (23) being at its periphery provided with alternating spaces and teeth (42) fitting into a castellated end of the first housing element (1).

14. A device according to claim 13, characterized in that the anti-rotation disc (23) serves as an abutment for the nut element (27) and limits movement of the nut element towards the cartridge.

15. A device according to claim 14, characterized in that the abutment between the nut element (27) and the anti-rotation disc (23) are formed as annular ramps (31) which when in mutual abutment allow only relative rotation of the first and second housing element in a device loading direction.

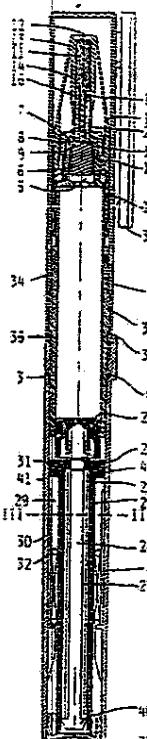
16. A device according to claim 15, characterized in that the nut element (27) has an tubular extension coaxially surrounding the piston rod (22) and terminated by a knob (33) at an outer end of the second housing element (2), the knob (33) being flush with the edge of the outer end of the second housing element when the annular ramps of the anti-rotation disc and the nut element are in mutual abutment.



PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 :		(11) International Publication Number:	WO 92/11049
A61M 11/06	AI	(43) International Publication Date:	9 July 1992 (09.07.92)
(21) International Application Number:	PCT/DK91/00400	(74) Common Representative:	NOVO NORDISK A/S; Patent Department, Novo Allé, DK-2880 Bagsvaerd (DK).
(22) International Filing Date:	19 December 1991 (19.12.91)	(81) Designated States:	AT (European patent), AU, BB, BE (European patent), BF (OAPI patent), BG, BJ (OAPI patent), BR, CA, CF (OAPI patent), CG (OAPI patent), CH (European patent), CI (OAPI patent), CM (OAPI patent), CS, DE (European patent), DK (European patent), ES (European patent), FI, FR (European patent), GA (OAPI patent), GB (European patent), GN (OAPI patent), GR (European patent), HU, IT (European patent), JP, KP, KR, LK, LU (European patent), MC (European patent), MG, ML (OAPI patent), MR (OAPI patent), MW, NL (European patent), NO, PL, RO, SD, SE (European patent), SN (OAPI patent), SU*, TD (OAPI patent), TG (OAPI patent), US.
(30) Priority data:	3028/90 21 December 1990 (21.12.90) DK	(71) Applicant (for all designated States except US):	NOVO NORDISK A/S [DK/DK]; Novo Allé, DK-2880 Bagsvaerd (DK).
(72) Inventors; and		(73) Inventors/Applicants (for US only):	REX, Jørn [DK/DK]; Hyldetoften 6, Gundsømagle, DK-4000 Roskilde (DK); STEENGAARD, Kim [DK/DK]; Ketilstorp Allé 53, DK-2650 Hvidovre (DK). ELK, Svend [DK/DK]; Lyngborghave 48, DK-3460 Birkerød (DK).
(54) Title: A PEN SHAPED DEVICE FOR NASAL ADMINISTRATION OF DOSES OF A LIQUID MEDICINE		(57) Abstract	<p>A pen shaped device for nasal administration of doses of a liquid medicine, comprising a first and a second housing element, the first housing element (1) comprising a cartridge for the medicine, this cartridge being at one end closed by a piston (21) and being at its other end closed by a valve (7, 9), which may be opened to connect the cartridge to a spray nozzle (12). When the two housing elements are rotated relatively to each other, a nut member (27) is proportional to the rotation moved along a threaded piston rod (22) to compress a helical spring (32) to act via the nut element (27) and the piston rod (22) on the piston (21) to put the content of the cartridge under pressure, which pressure may be released by opening the valve (7, 9) to lead the medicine in the cartridge to the nozzle (12).</p> 

* See back of page

PART B- ISSUE FEE TRANSMITTAL

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 2 through 6 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advances orders and notification of maintenance fees will be mailed to addressee entered in Block 1 unless you direct otherwise, by: (a) specifying a new correspondence address in Block below; or (b) providing the PTO with a separate "RE-ADDRESS" for maintenance fee notifications with the payment of Issue Fee or thereafter. See reverse for Certificate of Mailing.

1. CORRESPONDENCE ADDRESS <i>RE-ADDRESS</i> 		2. INVENTOR(S) ADDRESS CHANGE (Complete only if there is a change)					
		INVENTOR'S NAME					
		Street Address					
		City, State and ZIP Code					
		CO-INVENTOR'S NAME					
		Street Address					
		City, State and ZIP Code					
		<input type="checkbox"/> Check if additional changes are on reverse side					
SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT			DATE MAILED	
First Name: <i>Steve</i> Applicant	14-1447 04/01/94	616	JOHN R.			04/01/94	
TITLE OF INVENTION <i>DEVICETM FOR DELIVERY OF A DOSE OF AN ANTI-ULCER DRUG</i>							
ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEES DUE	DATE DUE	
SC13090 04/01/94 08054917	139-200	1447	001	N	813.74, 60	04/01/94	
SC13091 04/01/94 08054917							
3. Correspondence address change (Complete only if there is a change) Novo Nordisk of North America, Inc. 405 Lexington Avenue, Suite 6400 New York, New York 10174-6400							
4. For printing on the patent front page, list the names of not more than 3 registered patent attorneys or agents OR alternatively, the name of a firm having as a member a registered attorney or agent. If no name is listed, none will be printed.							
<i>Steve T. Zelson</i>							
5. ASSIGNMENT DATA TO BE PRINTED ON THE PATENT (print or type)							
(1) NAME OF ASSIGNEE: <i>Novo Nordisk A/S</i>				6a. The following fees are enclosed: <input type="checkbox"/> Issue Fee <input type="checkbox"/> Advanced Order - # of Copies _____ (Minimum of 10)			
(2) ADDRESS: (CITY & STATE OR COUNTY) <i>NOVO Allé, DK-2800, Bagsværd, Denmark</i>				6b. The following fees should be charged to: DEPOSIT ACCOUNT NUMBER <i>14-1447</i> (ENCLOSED PART C)			
(3) STATE OF INCORPORATION, IF ASSIGNEE IS A CORPORATION				<input type="checkbox"/> Issue Fee <input type="checkbox"/> Advanced Order - # of Copies <i>20</i> (Minimum of 10) <input type="checkbox"/> Any Deficiencies in Enclosed Fees			
A. <input type="checkbox"/> This application is NOT assigned. B. Assignment is being previously submitted to the Patent and Trademark Office. C. Assignment is being submitted under separate cover. Assignments should be directed to Box ASSIGNMENTS.				The COMMISSIONER OF PATENTS AND TRADEMARKS is requested to apply the Issue Fee to the application identified above. (Signature of party in interest of record) <i>Steve T. Zelson</i> (Date) <i>8/25/94</i>			
NOTE: The Issue Fee will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.							
TRANSMIT THIS FORM WITH FEE CERTIFICATE OF MAILING ON REVERSE							
PTOL-65B (REV.7-92)(OMB Clearance is pending)							

Certificate of Mailing

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Box ISSUE FEE
Commissioner of Patents and Trademarks
Washington, D.C. 20231

on March 23, 1999

{Date}

(Signature)

Steve T. Zelson, Esq. (Reg. No. 30,335)
(Typed or Printed Name)

March 25, 1994

(Date)

Note: If this certificate of mailing is used, it can only be used to transmit the Issue Fee. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

This form is estimated to take 20 minutes to Complete. Time will vary depending upon the needs of the individual applicant. Any comments on the amount of time you require to complete this form should be sent to the Office of Management and Organization, Patent and Trademark Office, Washington, D.C. 20231 and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.



Attorney Docket No.: 3573.214-US

PATENT

Issue Batch Number: U90

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Rex et al.

Serial No.: 08/054,913 Group Art Unit: 3307

Filed: April 27, 1993 Examiner: K. Asher

For: NOSE PEN

ISSUE FEE TRANSMITTAL

Hon. Commissioner of Patents and Trademarks
Washington, DC 20231

Sir:

Applicants enclose the issue fee for the above-captioned application and the Transmittal form (PTOL-85B).

Please charge the issue fee, estimated to be \$1170.00, and the fee for 20 copies of the issued patent, estimated to be \$60.00 to Novo Nordisk of North America, Inc., Deposit Account No. 14-1447. A duplicate of this sheet is enclosed.

Respectfully submitted,

Date: March 25, 1994

Steve T. Zelson, Reg. No. 30,335
Novo Nordisk of North America, Inc.
405 Lexington Avenue, Suite 6400
New York, NY 10174-6201
(212) 867-0123



Attorney Docket No.: 3573.214-US

PATENT

Issue Batch Number: U90

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Rex et al.

Serial No.: 08/054,913 Group Art Unit: 3307

Filed: April 27, 1993 Examiner: K. Asher

For: NOSE PEN

ISSUE FEE TRANSMITTAL

Hon. Commissioner of Patents and Trademarks
Washington, DC 20231

Sir:

Applicants enclose the issue fee for the above-captioned application and the Transmittal form (PTOL-85B).

Please charge the issue fee, estimated to be \$1170.00, and the fee for 20 copies of the issued patent, estimated to be \$60.00, to Novo Nordisk of North America, Inc., Deposit Account No. 14-1447. A duplicate of this sheet is enclosed.

Respectfully submitted,

Date: March 25, 1994

Steve T. Zelson, Reg. No. 30,335
Novo Nordisk of North America, Inc.
405 Lexington Avenue, Suite 6400
New York, NY 10174-6201
(212) 867-0123



Attorney Docket No.: 3573.214-US

PATENT

Issue Batch No. U90

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Rex et al.

Serial No.: 08/054,913

Group Art Unit: 3307

Filed: April 27, 1993

Examiner: K. Asher

For: NOSE PEN

CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)

Hon. Commissioner of Patents and Trademarks
Washington, DC 20231

Sir:

I hereby certify that the attached correspondence comprising:

1. Issue Fee Transmittal (in duplicate)
2. Part B - Issue Fee Transmittal (PTOL-85B)
3. Part C - Charge to Deposit Account (PTOL-85C)

is being deposited with the United States Postal Service as first class mail in an envelope addressed to:

Box ISSUE FEE
Commissioner of Patents and Trademarks
Washington, DC 20231

on March 25, 1994.

Steve T. Zelson
(name of person mailing paper)

Steve T. Zelson
(signature of person mailing paper)

Your input please
fr a 2574318

Your question
FR 2574318

Family members

CC PUBDAT KD	DOC.NO.	CC PR.DAT AKP YY	PR. NO.
FR 860613 A1	2574318	FR 840021 PA 84	5413267
1 MEMBERS		1 COUNTRIES	

Your input please
ep a 0638886

Your question
EP P 338886

Family members

CC PUBDAT KD	DOC.NO.	CC PR.DAT AKP YY	PR. NO.
AU 291019 A1	33064/89	GB 330416 PA 88	8809115
AU 920138 B2		619536	

BR 891128 A 8901828

DK 890418 A0 1868/89

DK 891019 A 1868/89

EP 891025 A2 338886

DES BE CH DE ES FR GB GR IT LI LU
NL

EP 891129 A3 338886

DES BE CH DE ES FR GB GR IT LI LU
NL

GB 880518 A8 8809115

JP 940312 A2 2671758

US 920414 A 5104380

10 MEMBERS 7 COUNTRIES

Your input please
fr a 2628011

Your question
FR 2628011

Family members

CC PUBDAT KD	DOC.NO.	CC PR.DAT AKP YY	PR. NO.
AU 890907 A1	30105/89	FR 880304 PA 88	8802756

AU 910711 B2 612457

FR 890908 A1 2628011

FR 910125 B1 2628011

GB 890412 A8 8904925

GB 891011 A1 2216424

GB 920311 B2 2216424

NZ 910326 A 226209

8 MEMBERS 4 COUNTRIES

Your input please
ep a 0628173

Your question
EP P 28173

Family members

CC PUBDAT KD	DOC.NO.	CC PR.DAT AKP YY	PR. NO.
EP 810506 A1	28173	FR 791030 PA 79	7926851

DES AT BE CH DE GB IT LU NL SE

FR 810509 A1 2469413

JP 810711 A2 54005329

8 MEMBERS 3 COUNTRIES

Your input please
de c 184313

Your question
DE 184313

0 MEMBERS 0 COUNTRIES
 Your input please
 gb a 553149

Your question
 GB 553149
 0 MEMBERS 0 COUNTRIES
 Your input please
 wo a 8809189

Your question
 WO P 8809189
 Family members
 CC PUBDAT KD DOC.NO. CC PR.DAT AKP YY PR. NO.
 AT 920415 E 73679 FR 870526 PA 87 8707409
 AU 881221 A1 17934/88
 DE 920423 C0 3869214
 EP 881207 A2 294272
 DES ES GR
 EP 890405 A3 294272
 DES ES GR
 EP 890517 A1 315661
 DES AT BE CH DE FR GB IT LI LU NL
 SE
 EP 920318 B1 294272
 DES AT BE CH DE ES FR GB GR IT LI
 LU NL SE
 FR 881202 A1 2615739
 FR 900119 B1 2615739
 JP 891116 T2 1503367
 US 910917 A 5049125
 WO 881201 A2 8809189
 DES AU BR DK FI JP KR NO US

Please turn over to next page

REG AT BE CH DE FR GB IT LU NL SE
 WO 890209 A3 8809189
 DES AU BR DK FI JP KR NO US
 REG AT BE CH DE FR GB IT LU NL SE
 +AT 920415 E 73679 FR 880411 PA 88 8884764
 +AU 881221 A1 17934/88
 +DE 920423 C0 3869214
 +EP 881207 A2 294272
 DES ES GR
 +EP 890405 A3 294272
 DES ES GR
 +EP 890517 A1 315661
 DES AT BE CH DE FR GB IT LI LU NL
 SE
 +EP 920318 B1 294272
 DES AT BE CH DE ES FR GB GR IT LI
 LU NL SE
 FR 891013 A1 2629706
 FR 920522 B1 2629706
 +JP 891116 T2 1503367
 +US 910917 A 5049125
 +WO 881201 A2 8809189
 DES AU BR DK FI JP KR NO US
 Please turn over to next page

REG AT BE CH DE FR GB IT LU NL SE
 +WO 890209 A3 8809189
 DES AU BR DK FI JP KR NO US
 REG AT BE CH DE FR GB IT LU NL SE

+AU 881221 AI 17934/88 WD 880524 PA 88FR 8800258
+EP 890517 AI 315661 W 880524 PW 88FR 8800258
DES AT BE CH DE FR SE IT LI LU NL
SE
+JP 891116 T2 1503367
+US 910917 A 5849125
+AT 920415 E 73679 EP 880524 PA 88 88401260
31 MEMBERS 8 COUNTRIES
Your input please
gb 9100532

Your question
GB 9100532

Family members
CC PUBDAT KD DOC.NO. CC PR.DAT AKP YY PR. NO.
GB 910220 A0 9100532 GB 910119 PA 91 9100532
GB 920715 AI 2251558
2 MEMBERS 1 COUNTRIES

Your input please
wo 9115303

Your question
WO P 9115303

Family members
CC PUBDAT KD DOC.NO. CC PR.DAT AKP YY PR. NO.
AU 911030 AI 76553/91 GB 900406 PA 90 9007813
GB 900606 A0 9007813
GB 910522 A0 9107138
GB 911218 AI 2245039
NO 921005 A0 923876
WO 911017 A2 9115303
DES AU BR CA FI GB JP KR NO US
REG AT BE CH DE DK ES FR GB GR IT
LU NL SE

WO 911128 A3 9115303
DES AU BR CA FI GB JP KR NO US
REG AT BE CH DE DK ES FR GB GR IT
LU NL SE

+AU 911030 AI 76553/91 WO 910405 PA 91GB 9100532
+NO 921005 A0 923876 WO 910405 PW 91GB 9100532
9 MEMBERS 4 COUNTRIES

Your input please
ep a 6338806

Your question
EP P 338806

Family members
CC PUBDAT KD DOC.NO. CC PR.DAT AKP YY PR. NO.
AU 891019 AI 83064/89 GB 880418 PA 88 8809115
AU 920130 B2 619536
BR 891129 A 8901828
DK 890418 A0 1860/89
DK 891019 A 1860/89
EP 891025 A2 338806
DES BE CH DE ES FR GB GR IT LI LU
NL

EP 891129 A3 338806
DES BE CH DE ES FR GB GR IT LI LU
NL

GB 880518 A0 8809115
JP 900312 A2 2071758
US 920414 A 5104380

10 MEMBERS 7 COUNTRIES

Your input please
logoff

Your question
 L0 S
 0 MEMBERS 0 COUNTRIES
 Your input please
 end

14:21:35 TIME
 14:17:09 START
 92.11.06 DATE
 9950 TASK NUMBER
 6,6471 CPU TIME
 DATEX1 USER
 please log int:

=> d his

(FILE 'USPAT' ENTERED AT 08:24:42 ON 06 NOV 92)
 L1 125779 S 128/CLAS OR 604/CLAS OR 222/CLAS
 L2 21083 S L1 AND LIQUID#
 L3 3711 S L2 AND (SPRAY### OR AEROSOL?)
 L4 891 S L3 AND PISTON#
 L5 626 S L4 AND SPRING#
 L6 5 S L5 AND PEN
 L7 8 S L5 AND INSULIN — NO GOOD

=> d 14 1-5

1. 5,049,125, Sep. 17, 1991, Needleless injection apparatus of a liquid, notably for dental care; Claude Accaries, et al., 604/70 , 68 , 71 [IMAGE AVAILABLE]
2. 5,022,414, Jun. 11, 1991, Tissue separator method; George H. Muller, 128/898 ; 606/190 [IMAGE AVAILABLE]
3. 4,397,640, Aug. 9, 1983, Instrument for irrigation of a surgical site; Erich Haug, et al., 604/33 ; 433/95, 100; 604/35 ; D24/113
4. 4,241,850, Dec. 30, 1980, Personal protective device; Eugene M. Speer, et al., 222/39 ; 42/1.08, 1.09; 63/1.1; 222/78 , 82 , 162 , 325 , 336 ; 239/154 [IMAGE AVAILABLE]
5. 3,698,390, Oct. 17, 1972, DISPENSING FOR MEDICAMENTS; Frank Donald Ferris, 128/202.13 ; 604/59

=>
 Session canceled by user rRRUUUUUUUUUUUUUUU

NO CARRIER

ATH
 OK

FILE 'USPAT' ENTERED AT 08:39:07 ON 06 NOV 92
=> s 5104380/pn
L8 1 5104380/PN

=> d 18

1. 5,104,380 , Apr. 14, 1992, Syringe with dose metering device; Rury R. Holman, et al., 604/117, 157, 211, 224, 232 [IMAGE AVAILABLE]

=> s 5049125/pn
L9 1 5049125/PN

=> d

1. 5,049,125 , Sep. 17, 1991, Needleless injection apparatus of a liquid, notably for dental care; Claude Accaries, et al., 604/70, 68, 71 [IMAGE AVAILABLE]

=>
Session canceled by user re~UUUUUUUUUUUUUUUUU

NO CARRIER

AA
<F2>NoEcho <F3>Mark <F5>Prtoff <F6>NoSave <F7>Line <F8>Logoff <F9>Hngp <F10>Brk

12A24947 US POST OFFICE
TO ADDRESSEE

ORIGIN	Date M 17 Y 02	Postage	5
Post Office Zip Code	Time A.M. P.M.	Return Receipt	3
Initials of Receiving Clerk	Weight lbs	C.O.D.	5
ACCEPTANCE <input type="checkbox"/> International <input type="checkbox"/> County Case			
<input type="checkbox"/> Next Day Delivery <input type="checkbox"/> Second Day Delivery			
<input type="checkbox"/> By 12 Noon <input type="checkbox"/> By 3:00 P.M.			
<input type="checkbox"/> Monday <input type="checkbox"/> Tuesday <input type="checkbox"/> Military <input type="checkbox"/> 3rd Day			
Express Mail Corporate Account No.	Federal Agency Account No.		
FROM: NOVO INCORP. 405 LEXINGTON AVE NEW YORK N.Y. 10174			
2ND FL CODE			

ADDRESSEE'S COPY

DESTINATION	Date M 14 Y 02	Time of Delivery	<input type="checkbox"/> A.M. <input type="checkbox"/> P.M.
X Signature of Addressee	ROOM JAN 31 1992		
DELIVERY WAS ATTEMPTED	Date M 14 Y 02	Time A.M. P.M.	
Signature of Delivery Employee	I hereby certify to be myself the addressee of the addressed mail and that I am the authorized recipient of the delivery employee, the above named (or his/her initials) and I authorizes the delivery employee to sign and the signature so delivered and understand that the signature of the delivery employee will constitute valid proof of delivery.		
Waiver of Signature and Indemnity (Domestic Only)	SIGNED:		
TO: Telephone Number: BOX PCT NON COMMISSIONER OF PATENTS AND TRADEMARKS WASHINGTON D.C. 20231			

07/793, 412 01/13/92 128
1-DK 2-DK
JORN REX, ROSKILDE, DENMARK; KIM STEENGAARD, HVIDOURE, DENMARK; SVEND
ELK, BIRKERØD, DENMARK. DKY

3307

VERIFIED

*CONTINUING DATA*****

*FOREIGN/PCT APPLICATIONS*****
VERIFIED DENMARK
3028/90

12/21/90

DKX 2 16 1 \$1,140.00 3573.204-US
STEVE T. ZELSON
NOVO NORDISK OF NORTH AMERICA, INC.
405 LEXINGTON AVE.,
SUITE 6200
NEW YORK, NY 10017
PEN SHAPED DEVICE FOR NASAL ADMINISTRATION OF DOSES OF A LIQUID
MEDICINE

DO/US WORKSHEET

INTERNATIONAL APPLICATION NUMBER <u>PCT/SEA/00400</u>		PRIORITY DATE <u>21 Dec 90</u>	CH. II <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30 MO. DUE DATE: <u>21 Aug 92</u>
INTERNATIONAL FILING DATE <u>19 Dec 1991</u>		FIRST NAMED APPLICANT FOR DO/DOUS <u>Rex, John et al.</u>	
LANGUAGE OF FILING		LANGUAGE OF PUBLICATION	
<input type="checkbox"/> ENGLISH	<input type="checkbox"/> ENGLISH	PUBLICATION NO. <u>WO92/11049</u>	
<input type="checkbox"/> FRENCH	<input type="checkbox"/> FRENCH	DATE <u>2 July 1992</u>	
<input type="checkbox"/> GERMAN	<input type="checkbox"/> GERMAN	GAZETTE ISSUE <u>17/1992</u>	
<input type="checkbox"/> JAPANESE	<input type="checkbox"/> JAPANESE		
<input type="checkbox"/> RUSSIAN	<input type="checkbox"/> RUSSIAN		
<input type="checkbox"/> SPANISH	<input type="checkbox"/> SPANISH		
<input type="checkbox"/> NOT PUBLISHED: <input type="checkbox"/> U.S. ONLY DO/DO <input type="checkbox"/> AS OF EP REQUEST			
ART 20 RECEIPTS FROM IB			
ITEM		<input type="checkbox"/> NORMAL	<input type="checkbox"/> FROM APPLICANT <input type="checkbox"/> IB LATE <input type="checkbox"/> EP REQUEST
REQUEST		<input type="checkbox"/> YES	<input type="checkbox"/> NO
DESCRIPTION		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
CLAIMS		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
DRAWING		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
SEARCH REPORT ORIGINAL		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
SEARCH REPORT ENGLISH		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
AMENDED CLAIMS		<input type="checkbox"/> YES	<input type="checkbox"/> NO
PRIORITY DOCUMENT		<input type="checkbox"/> YES	<input type="checkbox"/> NO
IPER		<input type="checkbox"/> YES	<input type="checkbox"/> NO
RECEIPTS FROM APPLICANT UNDER 35 U.S.C. 371			
ITEM		COMPLETE AT	
NATIONAL FEE		<input checked="" type="checkbox"/> 24	<input type="checkbox"/> 30 MO. <input type="checkbox"/> 22 <input type="checkbox"/> 32 MO.
OATH/DECLARATION		<input type="checkbox"/> YES	<input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> SURCHARGE <input type="checkbox"/> NO
TRANSLATION OF:		<input type="checkbox"/> YES	<input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> SURCHARGE <input type="checkbox"/> NO
REQUEST		<input type="checkbox"/> YES	<input type="checkbox"/> NO <input type="checkbox"/> PROCESSING FEE
DESCRIPTION		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> NO TRANSLATION REQUIRED
CLAIMS		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> NO
ABSTRACT		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> NO
MOSGS/ DRAWING		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> NONE
ARTICLE 19 AMOT.		<input type="checkbox"/> YES	<input type="checkbox"/> NO** <input type="checkbox"/> CANCELLED
(TO CLAIMS: MUST BE RECEIVED BY 30 OR 32 MOS.)			
ART. 36(3) AMT. <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> NONE			
(TO <input type="checkbox"/> CLAIMS <input type="checkbox"/> DESCRIPTION <input type="checkbox"/> DRAWING: <input type="checkbox"/> CANCELLED IF NOT BY 32 MO.)			
OTHER RECEIPTS FROM APPLICANT AND DATE RECEIVED:			
EP REQUEST <input type="checkbox"/> YES <input type="checkbox"/> NO		OTHER: _____	
RECEIVED BEFORE: <input type="checkbox"/> 16 MO SEARCH REPORT. <input type="checkbox"/> 18 MO PUB <input type="checkbox"/> ART 20 FROM IB			
INFORMALITIES <input type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> OATH/DECLARATION	



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

United States Receiving Office
United States International Searching Authority
United States International Preliminary Examining
Authority
United States Designated Office
United States Elected Office

Address: Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

SERIAL #: 02/793412

TO: Patent Examiner
FROM: Catherine Short, DO/EO Supervisor
International Division
SUBJECT: Priority Document

The priority document was unavailable at the time the National Requirements were processed. The priority document 3028/9 will be forwarded to your office upon receipt in the International Office.

Priority document _____ is attached. Please enter in the application serial number _____ and endorse appropriately.

Thank you for your assistance. If you have any questions related to this application please contact me on (703) 603-0465.
Faulette Kedwell 303-3215

PATENT APPL'Y				INTER DETERMINATION FEE			
CLAIMS AS FILED - PART I				793,412			
Column 1				Column 2			
FOR	NUMBER FILED	NUMBER EXTRA		SMALL ENTITY	OTHER THAN SMALL ENTITY	SMALL ENTITY	OTHER THAN SMALL ENTITY
BASIC FEE				14.60	14.60	14.60	14.60
TOTAL CLAIMS	16	16(180)		10	10	10	10
INDEPENDENT CLAIMS		16(180)		36	36	36	36
MULTIPLE DEPENDENT CLAIM PRESENT			X	110	110	110	110
* If no entry in column 1 or 2 enter "0" in column 2.				TOTAL			
CLAIMS AS AMENDED - PART II							
Column 1				Column 2			
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	SMALL ENTITY	OTHER THAN SMALL ENTITY	SMALL ENTITY	OTHER THAN SMALL ENTITY
Total	16(180)	"	"	OR	OR	OR	OR
Independent	16(180)	"	"	OR	OR	OR	OR
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				TOTAL ADDT. FEE			
Column 1				Column 2			
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDITIONAL FEE	RATE	ADDITIONAL FEE
Total	16(180)	"	"	OR	OR	OR	OR
Independent	16(180)	"	"	OR	OR	OR	OR
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				TOTAL ADDT. FEE			
Column 1				Column 2			
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDITIONAL FEE	RATE	ADDITIONAL FEE
Total	16(180)	"	"	OR	OR	OR	OR
Independent	16(180)	"	"	OR	OR	OR	OR
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				TOTAL ADDT. FEE			
* If no entry in column 1 or 2 enter "0" in column 2, and "0" in column 3. ** If the Highest Number Previously Paid For in THIS SPACE is less than 20, enter "20". ADDT. FEE *** If the Highest Number Previously Paid For in THIS SPACE is less than 3, enter "3". The Highest Number Previously Paid For (Total or Independent) is the highest number found in the appropriate box in column 2.							

PATENT APPLICATION FEE DETERMINATION RECORD				Application or Docket Number 054913	
Effective October 1, 1992					
CLAIMS AS FILED - PART I				OTHER THAN OR SMALL ENTITY	
(Column 1)		(Column 2)			
FOR	NUMBER FILED		NUMBER EXTRA	RATE	FEES
BASIC FEE				\$355.00	
TOTAL CLAIMS	16	minus 20 =	*	x\$11=	
INDEPENDENT CLAIMS	1	minus 3 =	*	x 37=	
MULTIPLE DEPENDENT CLAIM PRESENT				+115=	
				TOTAL	
* If the difference in column 1 is less than zero, enter "0" in column 2				OR TOTAL	940
CLAIMS AS AMENDED - PART II				OTHER THAN OR SMALL ENTITY	
(Column 1)		(Column 2)			
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDI- TIONAL FEE
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				+115=	
(Column 1)		(Column 2)			
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDI- TIONAL FEE
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				+115=	
(Column 1)		(Column 2)			
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDI- TIONAL FEE
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				+115=	
<small>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</small> <small>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". ADDIT. FEE</small> <small>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</small> <small>The "Highest Number Previously Paid For" (Total or Independently) is the highest number found in the appropriate box in column 1.</small>					

PATENT APPLICATION FEE DETERMINATION RECORD					Application or Docket Number 054913
Effective October 1, 1992					
CLAIMS AS FILED (Column 1)		PART I (Column 2)			SMALL ENTITY OR OTHER THAN SMALL ENTITY
FOR	NUMBER FILED	NUMBER EXTRA		RATE	FEES
BASIC FEE				\$355.00	
TOTAL CLAIMS	16	minus 20 =	*	x\$11=	\$710.00
INDEPENDENT CLAIMS	1	minus 3 =	*	x 37=	
MULTIPLE DEPENDENT CLAIM PRESENT				+115=	
				TOTAL	
* If the difference in column 1 is less than zero, enter "0" in column 2.				OR TOTAL	940
CLAIMS AS AMENDED - PART II (Column 1) (Column 2) (Column 3)					SMALL ENTITY OR OTHER THAN SMALL ENTITY
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDITIONAL FEE
	Total	**	=	x\$11=	
	Independent	***	=	x 37=	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				+115=	
				TOTAL	
(Column 1) (Column 2) (Column 3)				ADDITIONAL FEE	ADDITIONAL FEE
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDITIONAL FEE
	Total	**	=	x\$11=	
	Independent	***	=	x 37=	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				+115=	
				TOTAL	
(Column 1) (Column 2) (Column 3)				ADDITIONAL FEE	ADDITIONAL FEE
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDITIONAL FEE
	Total	**	=	x\$11=	
	Independent	***	=	x 37=	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				+115=	
				TOTAL	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". ADDIT. FEE
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

U.S. DEPARTMENT OF COMMERCE-PATENT & TM OFFICE PREPARED BY <u>Y. O. A. N. C.</u>									
PALM III APPLICATION FILE DATA CODING SHEET									
FORMAT NO. 2 Serial No.	TYPE	GROUP	SPECIAL HANDLING	ART UNIT	CLASS	SECTS OF DRAWINGS	ASGT?	TOTAL CLAIMS	INDEPENDENT SMALL CLAIMS
07793412	APPL	1	1	392	234	29	N	6	1
ATTORNEY DOCKET NUMBER (12 spaces)									
FORMAT NO. 3	3573	204	-US						
Att'y's Reg. No. <input type="checkbox"/> APPL. PAPERS <input type="checkbox"/> CODING SHEET									
FORMAT NO. 4 Applicant's Name & Address <input type="checkbox"/> APPL. PAPERS <input type="checkbox"/> CODING SHEET									
FORMAT NO. 5 Title of Invention <input type="checkbox"/> APPL. PAPERS <input type="checkbox"/> CODING SHEET									
FORMAT NO. 6&7 Correspondence Address <input type="checkbox"/> APPL. PAPERS <input type="checkbox"/> CODING SHEET									
FORMAT NO. 8									
RECORD	8	0	1						
RECORD	8	0	2						
RECORD	8	0	3						
RECORD	8	0	4						
RECORD	8	0	5						
RECORD	8	0	6						
RECORD	8	0	7						
RECORD	8	0	8						
RECORD	8	0	9						
RECORD	8	1	0						
FORMAT NO. 9									
RECORD	9	0	1						
RECORD	9	0	2						
RECORD	9	0	3						
RECORD	9	0	4						
RECORD	9	0	5						
RECORD	9	0	6						
RECORD	9	0	7						
RECORD	9	0	8						
RECORD	9	0	9						
RECORD	9	1	0						
FORMAT NO. 10									
FOREIGN CLAIMED?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO								
APPLICATION PAPERS	<input type="checkbox"/>								
FORMAT NO. 11									
FORMAT NO. 12									
FORMAT NO. 13									
FORMAT NO. 14									
FORMAT NO. 15									
FORMAT NO. 16									
FORMAT NO. 17									
FORMAT NO. 18									
FORMAT NO. 19									
FORMAT NO. 20									
FORMAT NO. 21									
FORMAT NO. 22									
FORMAT NO. 23									
FORMAT NO. 24									
FORMAT NO. 25									
FORMAT NO. 26									
FORMAT NO. 27									
FORMAT NO. 28									
FORMAT NO. 29									
FORMAT NO. 30									
FORMAT NO. 31									
FORMAT NO. 32									
FORMAT NO. 33									
FORMAT NO. 34									
FORMAT NO. 35									
FORMAT NO. 36									
FORMAT NO. 37									
FORMAT NO. 38									
FORMAT NO. 39									
FORMAT NO. 40									
FORMAT NO. 41									
FORMAT NO. 42									
FORMAT NO. 43									
FORMAT NO. 44									
FORMAT NO. 45									
FORMAT NO. 46									
FORMAT NO. 47									
FORMAT NO. 48									
FORMAT NO. 49									
FORMAT NO. 50									
FORMAT NO. 51									
FORMAT NO. 52									
FORMAT NO. 53									
FORMAT NO. 54									
FORMAT NO. 55									
FORMAT NO. 56									
FORMAT NO. 57									
FORMAT NO. 58									
FORMAT NO. 59									
FORMAT NO. 60									
FORMAT NO. 61									
FORMAT NO. 62									
FORMAT NO. 63									
FORMAT NO. 64									
FORMAT NO. 65									
FORMAT NO. 66									
FORMAT NO. 67									
FORMAT NO. 68									
FORMAT NO. 69									
FORMAT NO. 70									
FORMAT NO. 71									
FORMAT NO. 72									
FORMAT NO. 73									
FORMAT NO. 74									
FORMAT NO. 75									
FORMAT NO. 76									
FORMAT NO. 77									
FORMAT NO. 78									
FORMAT NO. 79									
FORMAT NO. 80									
FORMAT NO. 81									
FORMAT NO. 82									
FORMAT NO. 83									
FORMAT NO. 84									
FORMAT NO. 85									
FORMAT NO. 86									
FORMAT NO. 87									
FORMAT NO. 88									
FORMAT NO. 89									
FORMAT NO. 90									
FORMAT NO. 91									
FORMAT NO. 92									
FORMAT NO. 93									
FORMAT NO. 94									
FORMAT NO. 95									
FORMAT NO. 96									
FORMAT NO. 97									
FORMAT NO. 98									
FORMAT NO. 99									
FORMAT NO. 100									
FORMAT NO. 101									
FORMAT NO. 102									
FORMAT NO. 103									
FORMAT NO. 104									
FORMAT NO. 105									
FORMAT NO. 106									
FORMAT NO. 107									
FORMAT NO. 108									
FORMAT NO. 109									
FORMAT NO. 110									
FORMAT NO. 111									
FORMAT NO. 112									
FORMAT NO. 113									
FORMAT NO. 114									
FORMAT NO. 115									
FORMAT NO. 116									
FORMAT NO. 117									
FORMAT NO. 118									
FORMAT NO. 119									
FORMAT NO. 120									
FORMAT NO. 121									
FORMAT NO. 122									
FORMAT NO. 123									
FORMAT NO. 124									
FORMAT NO. 125									
FORMAT NO. 126									
FORMAT NO. 127									
FORMAT NO. 128									
FORMAT NO. 129									
FORMAT NO. 130									
FORMAT NO. 131									
FORMAT NO. 132									
FORMAT NO. 133									
FORMAT NO. 134									
FORMAT NO. 135									
FORMAT NO. 136									
FORMAT NO. 137									
FORMAT NO. 138									
FORMAT NO. 139									
FORMAT NO. 140									
FORMAT NO. 141									
FORMAT NO. 142									
FORMAT NO. 143									
FORMAT NO. 144									
FORMAT NO. 145									
FORMAT NO. 146									
FORMAT NO. 147									
FORMAT NO. 148									
FORMAT NO. 149									
FORMAT NO. 150									
FORMAT NO. 151									
FORMAT NO. 152									
FORMAT NO. 153									
FORMAT NO. 154									
FORMAT NO. 155									
FORMAT NO. 156									
FORMAT NO. 157									
FORMAT NO. 158									
FORMAT NO. 159									
FORMAT NO. 160									
FORMAT NO. 161									
FORMAT NO. 162									
FORMAT NO. 163									
FORMAT NO. 164									
FORMAT NO. 165									
FORMAT NO. 166									
FORMAT NO. 167									
FORMAT NO. 168									
FORMAT NO. 169									
FORMAT NO. 170									
FORMAT NO. 171									
FORMAT NO. 172									
FORMAT NO. 173									
FORMAT NO. 174									
FORMAT NO. 175									
FORMAT NO. 176									
FORMAT NO. 177									
FORMAT NO. 178									
FORMAT NO. 179									
FORMAT NO. 180									
FORMAT NO. 181									
FORMAT NO. 182									
FORMAT NO. 183									
FORMAT NO. 184									
FORMAT NO. 185									
FORMAT NO. 186									
FORMAT NO. 187									
FORMAT NO. 188									
FORMAT NO. 189									
FORMAT NO. 190									
FORMAT NO. 191									
FORMAT NO. 192									
FORMAT NO. 193									
FORMAT NO. 194									
FORMAT NO. 195									
FORMAT NO. 196									
FORMAT NO. 197									
FORMAT NO. 198									
FORMAT NO. 199									
FORMAT NO. 200									
FORMAT NO. 201									
FORMAT NO. 202									
FORMAT NO. 203									
FORMAT NO. 204									
FORMAT NO. 205									
FORMAT NO. 206									
FORMAT NO. 207									
FORMAT NO. 208									
FORMAT NO. 209									
FORMAT NO. 210									
FORMAT NO. 211									
FORMAT NO. 212									
FORMAT NO. 213									
FORMAT NO. 214									
FORMAT NO. 215									
FORMAT NO. 216									
FORMAT NO. 217									
FORMAT NO. 218									
FORMAT NO. 219									
FORMAT NO. 220									
FORMAT NO. 221									
FORMAT NO. 222									
FORMAT NO. 223									
FORMAT NO. 224									
FORMAT NO. 225									
FORMAT NO. 226									
FORMAT NO. 227									
FORMAT NO. 228									
FORMAT NO. 229									
FORMAT NO. 230									
FORMAT NO. 231									
FORMAT NO. 232									
FORMAT NO. 233									
FORMAT NO. 234									
FORMAT NO. 235									
FORMAT NO. 236									
FORMAT NO. 237									
FORMAT NO. 238									
FORMAT NO. 239									
FORMAT NO. 240									
FORMAT NO. 241									
FORMAT NO. 242									
FORMAT NO. 243									
FORMAT NO. 244									
FORMAT NO. 245									
FORMAT NO. 246									
FORMAT NO. 247									
FORMAT NO. 248									
FORMAT NO. 249									
FORMAT NO. 250									
FORMAT NO. 251									
FORMAT NO. 252									
FORMAT NO. 253									
FORMAT NO. 254									
FORMAT NO. 255									
FORMAT NO. 256									
FORMAT NO. 257									
FORMAT NO. 258									
FORMAT NO. 259									
FORMAT NO. 260									
FORMAT NO. 261									
FORMAT NO. 262									
FORMAT NO. 263									
FORMAT NO. 264									
FORMAT NO. 265									
FORMAT NO. 266									
FORMAT NO. 267									
FORMAT NO. 268									
FORMAT NO. 269									
FORMAT NO. 270									
FORMAT NO. 271									
FORMAT NO. 272									
FORMAT NO. 273									
FORMAT NO. 274									
FORMAT NO. 275									
FORMAT NO. 276									
FORMAT NO. 277									
FORMAT NO. 278									
FORMAT NO. 279									
FORMAT NO. 280									
FORMAT NO. 281									
FORMAT NO. 282									
FORMAT NO. 283									
FORMAT NO. 284									
FORMAT NO. 285									
FORMAT NO. 286									
FORMAT NO. 287									
FORMAT NO. 288									
FORMAT NO. 289									
FORMAT NO. 290									
FORMAT NO. 291									
FORMAT NO. 292									
FORMAT NO. 293									
FORMAT NO. 294									
FORMAT NO. 295									
FORMAT NO. 296									
FORMAT NO. 297									
FORMAT NO. 298									
FORMAT NO. 299									
FORMAT NO. 300									
FORMAT NO. 301									
FORMAT NO. 302									
FORMAT NO. 303									
FORMAT NO. 304									
FORMAT NO. 305									
FORMAT NO. 306									
FORMAT NO. 307									
FORMAT NO. 308									
FORMAT NO. 309									
FORMAT NO. 310									
FORMAT NO. 311									
FORMAT NO. 312									
FORMAT NO. 313									
FORMAT NO. 314									
FORMAT NO. 315									
FORMAT NO. 316									
FORMAT NO. 317									
FORMAT NO. 318									
FORMAT NO. 319									
FORMAT NO. 320									
FORMAT NO. 321									
FORMAT NO. 322									
FORMAT NO. 323									
FORMAT NO. 324									
FORMAT NO. 325									
FORMAT NO. 326									
FORMAT NO. 327									
FORMAT NO. 328									
FORMAT NO. 329									
FORMAT NO. 330									
FORMAT NO. 331									
FORMAT NO. 332									
FORMAT NO. 333									
FORMAT NO. 334									
FORMAT NO. 335									
FORMAT NO. 336									
FORMAT NO. 337									
FORMAT NO. 338									
FORMAT NO. 339									
FORMAT NO. 340									
FORMAT NO. 341									
FORMAT NO. 342									
FORMAT NO. 343									
FORMAT NO. 344									
FORMAT NO. 345									
FORMAT NO. 346									
FORMAT NO. 347									
FORMAT NO. 348									
FORMAT NO. 349									
FORMAT NO. 350									
FORMAT NO. 351									
FORMAT NO. 352									
FORMAT NO. 353									
FORMAT NO. 354									
FORMAT NO. 355									
FORMAT NO. 356									
FORMAT NO. 357									
FORMAT NO. 358									
FORMAT NO. 359									
FORMAT NO. 360									
FORMAT NO. 361									
FORMAT NO. 362									
FORMAT NO. 363									
FORMAT NO. 364									
FORMAT NO. 365									
FORMAT NO. 366									
FORMAT NO. 367									
FORMAT NO. 368									
FORMAT NO. 369									
FORMAT NO. 370									
FORMAT NO. 371									
FORMAT NO. 372									
FORMAT NO. 373									
FORMAT NO. 374									
FORMAT NO. 375									
FORMAT NO. 376									
FORMAT NO. 377									
FORMAT NO. 378									
FORMAT NO. 379									
FORMAT NO. 380									
FORMAT NO. 381									
FORMAT NO. 382									
FORMAT NO. 383									
FORMAT NO. 384									
FORMAT NO. 385									
FORMAT NO. 386									
FORMAT NO. 387									
FORMAT NO. 388									
FORMAT NO. 389									
FORMAT NO. 390									
FORMAT NO. 391									
FORMAT NO. 392									
FORMAT NO. 393									
FORMAT NO. 394									
FORMAT NO. 395									
FORMAT NO. 396									
FORMAT NO. 397									
FORMAT NO. 398									
FORMAT NO. 399									
FORMAT NO. 400									
FORMAT NO. 401									
FORMAT NO. 402									
FORMAT NO. 403									
FORMAT NO. 404									
FORMAT NO. 405									
FORMAT NO. 406									
FORMAT NO. 407									
FORMAT NO. 408									
FORMAT NO. 409									
FORMAT NO. 410									
FORMAT NO. 411									
FORMAT NO. 412									
FORMAT NO. 413									
FORMAT NO. 414									
FORMAT NO. 415									
FORMAT NO. 416									
FORMAT NO. 417									
FORMAT NO. 418									
FORMAT NO. 419									
FORMAT NO. 420									
FORMAT NO. 421									
FORMAT NO. 422									
FORMAT NO. 423									
FORMAT NO. 424									
FORMAT NO. 425									
FORMAT NO. 426									
FORMAT NO. 427									
FORMAT NO. 428									
FORMAT NO. 429									
FORMAT NO. 430									
FORMAT NO. 431									
FORMAT NO. 432									
FORMAT NO. 433									
FORMAT NO. 434									
FORMAT NO. 435									
FORMAT NO. 436									
FORMAT NO. 437									
FORMAT NO. 438									
FORMAT NO. 439									
FORMAT NO. 440									
FORMAT NO. 441									
FORMAT NO. 442									
FORMAT NO. 443									
FORMAT NO. 444									
FORMAT NO. 445									
FORMAT NO. 446									
FORMAT NO. 447									
FORMAT NO. 448									
FORMAT NO. 449									
FORMAT NO. 450									
FORMAT NO. 451									
FORMAT NO. 452									
FORMAT NO. 453									
FORMAT NO. 454									
FORMAT NO. 455									
FORMAT NO. 456									
FORMAT NO. 457									
FORMAT NO. 458									
FORMAT NO. 459									
FORMAT NO. 460									
FORMAT NO. 461									
FORMAT NO. 462									
FORMAT NO. 463									
FORMAT NO. 464									
FORMAT NO. 465									
FORMAT NO. 466									
FORMAT NO. 467									
FORMAT NO. 468									
FORMAT NO. 469									
FORMAT NO. 470									

SAN00941723

MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET (FOR USE WITH FORM PTO-875)						SERIAL NO.		FILING DATE	
						APPLICANT(S)			
						CLAIMS			
AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT		*	*	*	*
IND.	DEP.	IND.	DEP.	IND.	DEP.	IND.	DEP.	IND.	DEP.
1						51			
2						52			
3						53			
4						54			
5						55			
6						56			
7						57			
8						58			
9						59			
10						60			
11						61			
12						62			
13						63			
14						64			
15						65			
16						66			
17						67			
18						68			
19						69			
20						70			
21						71			
22						72			
23						73			
24						74			
25						75			
26						76			
27						77			
28						78			
29						79			
30						80			
31						81			
32						82			
33						83			
34						84			
35						85			
36						86			
37						87			
38						88			
39						89			
40						90			
41						91			
42						92			
43						93			
44						94			
45						95			
46						96			
47						97			
48						98			
49						99			
50						100			
TOTAL IND.						TOTAL IND.			
TOTAL DEP.	16					TOTAL DEP.			
TOTAL CLAIMS	17					TOTAL CLAIMS			

U.S. DEPARTMENT OF COMMERCE- PATENT & TRADEMARK OFFICE PACE DATA ENTRY CODING SHEET						1ST EXAMINER / Duncham		DATE 6/11/03	
APPLICATION NUMBER		TYPE APPL	FILING DATE MONTH DAY YEAR	SPECIAL HANDLING	GROUP ART UNIT	CLASS	SHEETS OF DRAWING		
10/054913		2	04/27/03	0	3307	128	- - 2		
TOTAL CLAIMS	16	INDEPENDENT CLAIMS	1	SMALL ENTITY?	0	FOREIGN LICENSE	ATTORNEY DOCKET NUMBER		
						3573	21	5445	
CONTINUITY DATA						PARENT PATENT NUMBER			
CONTINUITY CODE	3	STATUS CODE	PARENT APPLICATION SERIAL NUMBER	PARENT PATENT NUMBER			PARENT FILING DATE		
03			07993418				01	1393	
			0						
			0						
			0						
			0						
PCT/FOREIGN APPLICATION DATA						FOREIGN PCT/FOREIGN APPLICATION SERIAL NUMBER			
FOREIGN PRIORITY CLAIMED	X	COUNTRY CODE	071809100400				FOREIGN FILING DATE		
	X	K	302809100400				02/19/91		
	X	K							
	-	-							
	-	-							
	-	-							
	-	-							

		U.S. GOVERNMENT PRINTING OFFICE 1993-347-700	
PATENT NUMBER	ORIGINAL CLASSIFICATION		
	CLASS	SUBCLASS	
	128	300, 32	
APPLICATION SERIAL NUMBER	CROSS REFERENCE(S)		
08/054 913	CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)	
	128	277, 18	300, 14
APPLICANT'S NAME (PLEASE PRINT)	404	232	211
Rex et al			
IF REISSUE, ORIGINAL PATENT NUMBER			
INTERNATIONAL CLASSIFICATION			
A(01) M	15/08		
A(01) A1	11/00		
A(02) B	7/00		
A(01) M	5/00	GROUP ART UNIT	ASSISTANT EXAMINER (PLEASE STAMP OR PRINT FULL NAME)
		3307	KIMBERLY L ASHER
PTO 270 (REV. 5-91)	ISSUE CLASSIFICATION SLIP		PRIMARY EXAMINER (PLEASE STAMP OR PRINT FULL NAME) Edgar S. Burr
			U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

Staple Issue Slip Here

POSITION	INIT.	DATE
CLASSIFIER	70	8-18-93
EXAMINER	29	8-20-93
TYPIST	340	1-0-93
VERIFIER	430	Stat (P)
CORPS CORR		
SPEC. HAND		
FILE MAINT.		

INDEX OF CLAIMS

Claim	Date
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	

SYMBOLS
 (Through month) Rejected
 - Allowed Indicated
 - Disallowed Non-disallowed
 - Reference
 - Appendix
 - Objection

Claim	Date
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	

SEARCHED

Class	Sub.	Date	Exmr.
128	200.14 200.22 200.19 200.18 203.12 203.19 203.21 203.22 203.23 207.18	11/5/92	Kasler
604	307-209 211, 218 232, 135	11/6/92	Kasler

SEARCH NOTES

See APS	Date	Exmr.
Invpadoc inside	11/6/92	KA 10
Ex. Butterweck 604/207, 208, 209 211, 218, 232, 135,	11/6/92	KA 10
Cross ref 604/135 211		
Item sent and Xed 604/232		

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.

07/793412

329

ABANDONED

APPROVED FOR LICENSE

AUG 1 992 34

INITIALS _____

ABANDONEDEntered
or
Counted**CONTENTS**Received
or
MailedRECEIVED
GROUP 5

1) K91/400	1. Application	papers & Pats.	AUG 1 992 33 9
10/13	2. PCT/US/0/903		10-92
	2. Priority Document		
	3. Prior art Statement w/ Prior Art		Aug. 31, 1992
11-13	4. Ex. Parte Quayle (2mos.)	Dec 1992	
	5. Interview Summary	1-4-93	RECEIVED
	6. Stmt. + Legal Decl.	3-16-93	
	7. Reg. Gt. Line (3mos.) 5-1-93	4-27-93	ED
	8.	5.	
	9.		
	10.		
	11.		
	12.		
	13.		
	14.		
	15.		
	16.		
	17.		
	18.		
	19.		
	20.		
	21.		
	22.		
	23.		
	24.		
	25.		
	26.		
	27.		
	28.		
	29.		
	30.		
	31.		
	32.		

PALETTE RAILWELL
INTERNATIONAL DRAWING

AB ≠ DE, $\angle A \neq \angle D$
Dec = DE, $\angle P = \angle Q$
 $\therefore \triangle ABC \cong \triangle DEF$

Staple Issue Slip Here

POSITION	ID NO.	DATE
CLASSIFIER		
EXAMINER		4A8 6/17/93
TYPIST	BS TW	6-31-93
VERIFIER	258	6-22
CORPS CORR.		
SPEC. HAND		
FILE MAINT.		
DRAFTING		

INDEX OF CLAIMS

Claim	Date
Final	07 08
Original	09 09
2	10 10
3	11 11
4	12 12
5	13 13
6	14 14
7	15 V V
8	16 O =
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	

SYMBOLS

- Rejected
- Allowed
- (Through number) Cancelled
- Restricted
- N Non-selected
- I Interference
- A Appeal
- O Objected

Claim	Date
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	

(LEFT INSIDE)

SEARCHED

Class	Sub.	Date	Exmr.
128	200.14 200.18 200.19 200.22 203.12 203.19 203.21 203.22 203.23 207.18 604	7/23/93	Kisher
	207.209, 211.218 232, 135		

SEARCH NOTES

	Date	Exmr.

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.
128	200.14 200.22 207.18 604	2/4/94	KAS10
	211.232		

(RIGHT OUTSIDE)

00 / 054913